



80-PAGE  
SPECIAL REPORT

it's our  
**river**

THE POST-CRESCENT

# The life and times of the lower Fox River

Post-Crescent photo by Mike De Sisti

SUNDAY, OCTOBER 4, 1998



**ON THE SHORES** of the Fox River in Appleton is a portion of *The Post-Crescent* staff responsible for bringing you this comprehensive, 80-page special report. *The Post-Crescent* is a member of Thomson Wisconsin Newspapers and the Winnebago Strategic Marketing Group. Paul Seveska is *The Post-Crescent's* Publisher and President/CEO of the Winnebago SMG.

## about this project...

**I**t may have been the glaciers that formed the Fox River, but it is the river that formed the valley into what it is today.

All that we of the Fox River have, all that we of the Fox River are, is because of the river. The Fox River is the lifeblood of our community.

It has fed, entertained and employed us.

Those who have lived here for more than a quarter of a century have seen the river die and slowly return to life.

Six months ago, the staff of *The Post-Crescent* decided to dedicate itself to producing a section about the river that was both historical and educational, a section that looked at the river's past, present and future.

In the section you will find no advertising. It is our hope that our readers will want this section for its stories and photos and that they find it a valuable resource.

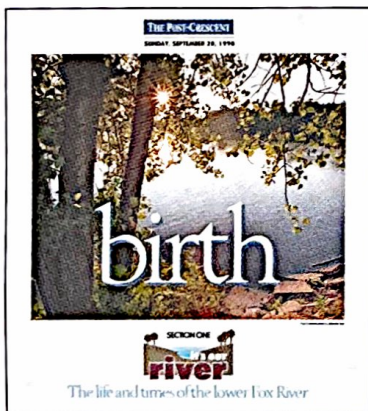
Every member of the editorial staff has contributed to this section, planned, assigned and edited by News Editor Amy Pelishek. Photo Editor Dwight Nale is in charge of photography and Steve Massie is responsible for design and presentation.

*The Post-Crescent* and the editorial staff take great pride in this section. We hope you find it educational and enjoyable.

— Bill Harke, Editor

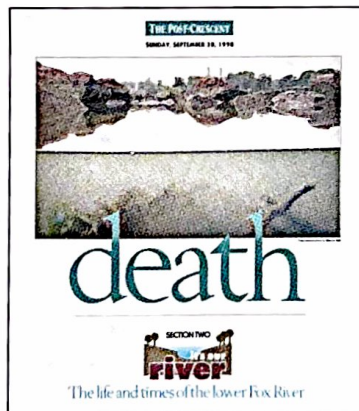
## inside this special report

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A colorful look at the events and personalities that helped mold the lower Fox River of today, from early explorers to missionaries to those who came seeking promise and prosperity.  
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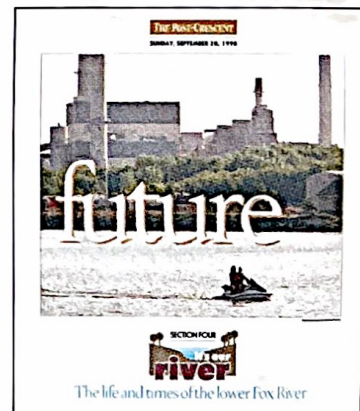
Through the decades, a variety of industrial booms on "the world's hardest working river" took its toll on the Fox, stirring a series of cleanup efforts  
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Grassroots efforts and determined, devoted people helped rescue the Fox River, along with the state of Wisconsin's rich tradition of utilizing innovation and technology  
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As the value of riverfront property balloons and the reliance on industry wanes, the Fox River's destiny may be as an appealing venue for residential development and recreation  
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## NO LONGER OUT OF SIGHT, OUT OF MIND

# With a legacy of neglect and pollution, the lower Fox River stands at a crossroads

By Ed Culhane

Post-Crescent staff writer



It was a great river, once.

Pure enough to drink, the Fox flowed easily for a hundred miles through game-rich forests and vast marshes before emerging from the Winnebago wetlands, swelled by the awesome power of the Wolf River, crashing and foaming through the bends at Appleton, cascading over bedrock, racing 40 miles down a glacial valley, falling into the greatest freshwater lakes in the world.

The tribes gathered here and called the great river Oukocitiming, the highway. Then came the explorers, the trappers, the missionaries, the settlers and the entrepreneurs.

For all of them, the Fox River was the magnet. Its waters held their hopes for the future.

In 1836, after meeting for days on the banks of the river, the Menominee Indians under Chief Oshkosh signed the Treaty of the Cedars, deeding 4 million acres of land, the Fox Valley, to the United States government. The price was \$700,000.

Seventeen years later, George Richmond built the first paper mill.

The Fox was harnessed with dams, tamed by locks, made to serve commerce and industry. In an era of bold exploitation, the river was put to work, creating fantastic wealth and a century and a half of prosperity, fueled by the greatest concentration of paper mills in the world.

But the newcomers didn't think of rivers the way the tribes did. They looked forward, not back, and they didn't dwell overlong on connections, on the river's place in the cycle of life.

The Fox became a running sewer, a dumping ground for raw waste, so foul and loathsome that even to touch it was to risk a skin rash, and no one would even think of putting water to mouth.

In some stretches, the decaying wastes sucked all oxygen from the river, leaving it barren of life. The pleasure boats that once bobbed along beside the steamers went away. So did the steamers, once the river stopped being a highway, replaced by rails and asphalt.

People stopped looking to the Fox. No one wrote of its beauty anymore, the way early travelers did.

The polluted river was a write-off. It was the price of success. If folks wanted pristine waters, they could drive north, or west. The Fox was an industrial river, an engine for production, a convenient disposal system.

The Fox River had become a dirty secret.

A century after the Treaty of Cedars, a Menominee Indian named Peter LaMotte spoke of these different views.

"This was our path and whenever we wished to drink of it, we could do so, for the water was pure



Post-Crescent photo by Mike De Sisti

**THE FOX RIVER**, looking west over the Combined Locks area, has been used and exploited for decades. Now, it faces possibly the most crucial point of its storied existence.

**The Fox was harnessed with dams, tamed by locks, made to serve commerce and industry. In an era of bold exploitation, the river was put to work, creating fantastic wealth and a century and a half of prosperity, fueled by the greatest concentration of paper mills in the world.**

and there was no evil anywhere. My white brother bought our path and all the woods beginning 110 years ago, for they saw in our path, not a river but a power to harness for work. Our tribe used the river when we traveled. Your tribe uses the river for power. For you need not to travel. You have arrived and this is the end of the road."

Somewhere along the line, that realization sank in, as it was sinking in across the nation. Foul water and unhealthy air changed the manner in which the new tribes thought of natural resources. No longer could connections be overlooked.

Earth Day, the single largest public demonstration in history, led to the sweeping environmental laws adopted by this country more than a quarter

century ago. Discharges to the river were regulated. Freed from unfettered pollution, the Fox began to restore itself, and life returned to the river.

But the legacy of pollution and neglect continues, and now the fate of the river is at a crossroads. In coming months, decisions will be made that will shape the nature of the river for new generations of travelers and settlers.

As those decisions are made - about the industrial chemicals that lace its sediments, about its largely abandoned navigational system, about its potential for wildlife, for new economic development, for travel and recreation and tourism - one thing has become clear.

The Fox is no longer forgotten. It is no longer out of sight, out of mind.

Not since the dams and locks were completed 140 years ago, when hundreds of people lined the shores to welcome the first steamer from the east, has there been so much public interest in the Fox.

The river flows now at the heart of a changing cultural and political landscape, and more than ever before, there is a broad and growing realization that the fate of the river mirrors the fate of the people who depend on it.

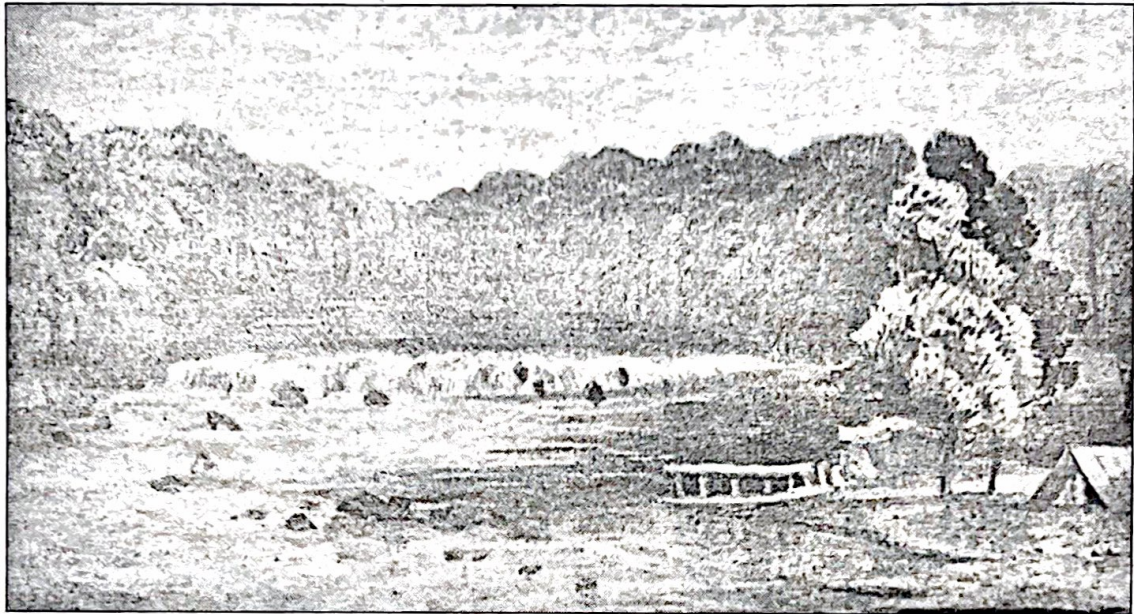
This growing interest comes from all directions, and takes diverse forms.

Educators and historians are plumbing the

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## River: lower Fox stands at a crossroads



**THE FLOWING** waters and high ridges of the lower Fox River, pictured in this historical illustration, are luring land speculators and developers. However, the sprawling development is creating new stresses on the river.

depths of the Fox like never before. School children in the Fox Valley are investigating the river, writing letters to elected officials, requesting detailed information from government agencies.

Officials with paper companies that have used the Fox to create wealth and prosperity now see the river as a potential liability, on a scale they could not have imagined in their worst dreams. Seeking some control on that liability, they are deeply engaged in the politics and engineering of sediment remediation.

Environmentalists see a great battleground in the Fox, a chance to take the next great step toward a sustainable future.

The size of the task is unprecedented. If it is completed successfully, and the results prove the effort worthwhile, the cleanup of the Fox could change the way people think about the value of surface waters and their place in the life of a society.

Politicians fear the Fox.

Local elected officials, focused on limited budgets, are nearly paralyzed by questions of liability and the irreconcilable demands of their constituencies. The sheer size of the problems and opportunities presented by the river is overwhelming, and the Fox offers no chance for convenient solutions.

Politicians on the national stage are frightened as well. Witness the carefully worded press releases coming from the offices of senators and congressmen in Washington - absent of anything

resembling a strong position - as they seek to balance the demands of powerful industries and an increasingly sophisticated electorate.

Moreover, the Fox has become the front line in a power struggle between state and federal agencies. Much is at stake. Both the state Department of Natural Resources and the U.S. Environmental Protection Agency are in transition, and the manner in which each manages, or fails to manage, the cleanup could effect their future viability.

The Menominee and Oneida tribes see the Fox, and their role in the cleanup, in the light of their struggle for sovereignty, as a test of their legal status as trustees of environmental resources. Backed by the federal government and most environmental organizations, opposed by the state, they have sought a place at the table, adding another layer of dispute to the complex equation of power.

Land speculators and developers are capitalizing on the growing affection for flowing waters, and the high ridges of the lower Fox support some of the grandest homes ever built in the valley. Sprawling development is creating new stresses on the health of the river.

Others see the Fox as a living museum, its ancient lochs restored, its historic sights enhanced and preserved.

Growing numbers of people would seek new pleasures from the Fox - fishermen, pleasure boaters, sightseers, hikers, canoeists and kayakers. Fishermen are demanding the restoration and

enhancement of critical watersheds, the habitats that nurture things wild and endlessly mysterious.

None of this points to a social revolution. No one is marching in the streets. But the Fox River is clearly at the center of an evolving public consciousness.

By its very nature, it is helping to change the way people think about their surroundings and about the ways people organize and govern themselves.

No longer are allegiances circumscribed by state or municipal borders. Armed with mounting evidence that economic and physical health rises from complex interactions with the environment, people are drawing other boundaries, boundaries that follow the landscape.

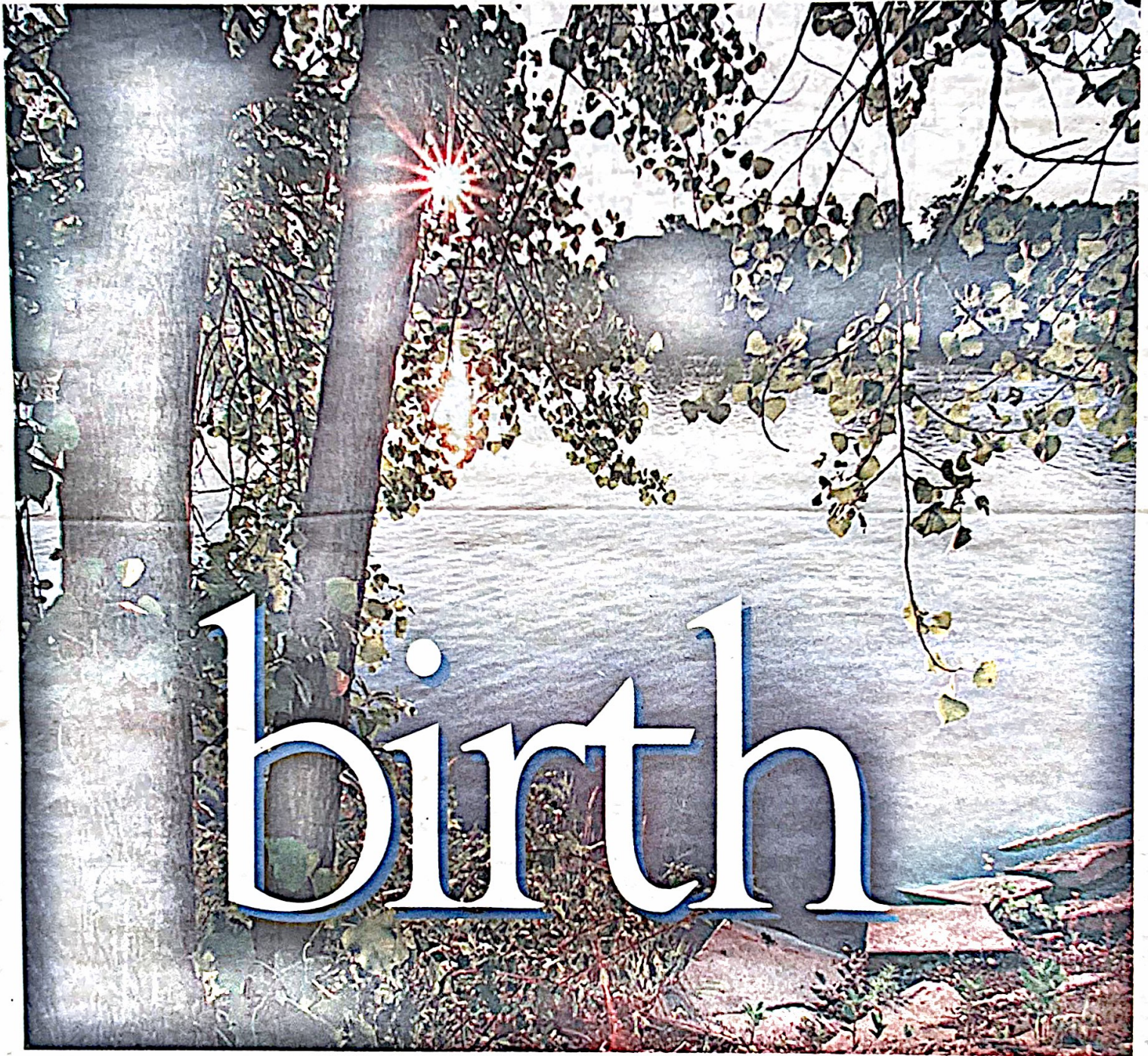
"It is very difficult to address resource and environmental issues when you have all these kinds of sometimes competing and certainly geographically dispersed units of government," said Bron Taylor, a professor of religion and social studies at the University of Wisconsin-Oshkosh.

"Part of what you are beginning to see in the Fox-Wolf Watershed is what has begun to happen fervently in other parts of the country," he said. "People are reorienting their focus along bio-regional lines."

We are not just Wisconsinites, or citizens of the United States, or residents of one of the towns, villages or cities that make up the Fox Valley.

We are the caretakers of a million-year-old river.

SUNDAY, OCTOBER 4, 1998



Post-Crescent photo by Mike De Sisti



The life and times of the lower Fox River

## HOW THE FOX WAS FORMED

# Initial formation of the Fox River is actually a tale of two rivers, experts say

By Steve Wideman  
Post-Crescent staff writer



If not for a quirk of geologic fate, Allison Blackmer may be mayor of Neenah or Menasha rather than chairman of the Town of Harrison.

Millions of years before man took up residence in the Town of Harrison, the town stood at the head of a much shorter version of an ancient Fox River that flowed along what would become High Cliff State Park north to Green Bay.

A series of glaciers would later carve out Lake Winnebago to serve as a feeding pond for the ancient river.

Glacial deposits would later force the lake waters to seek an alternate exit path: i.e. the Neenah-Menasha area.

That roundabout path of the Fox River, between the lake and Green Bay, is still in its infancy, said Jeff Clark, an assistant geology professor at Lawrence University.

"It's a blip in geologic time," Clark said.

The formation of the Fox River is actually a tale of two rivers.

Soil borings in Harrison have confirmed the presence of an old riverbed heading north through the town toward the present Fox River in Kaukauna.

Meanwhile, another ancient, much larger river valley, running from the New London area southwest to Portage and beyond carried its own river.

A tributary or finger of that greater, western stream reached east as far as the Kaukauna area and included the area of Little Lake Butte des Morts in the Town of Menasha.

Glaciers would later leave virtual mountains of stone, gravel, sand and other debris, known as glacial till, in an arc west of the current Fox River Valley, essentially stopping the westward flow.

The gathering waters needed some other route to escape.

Glaciers that carved out Lake Winnebago gave the waters their escape to the east.

Clark said the general contour of the land in the eastern part of the state tilts downward from west to east. That tilt is caused primarily by varying layers of bedrock.

Picture the western edge of the Fox River Val-

ley as being at the top of a stairway composed, instead of wooden steps, of massive sheets of bedrock. The bedrock staircase descends east toward High Cliff State Park.

"Seldom is a valley so definitely bounded on one side as is this one, and seldom does a valley have a boundary less conspicuous than that of the Fox River," according to a 1915 account of the Fox Valley's geologic history published by the University of Wisconsin.

The effect can be seen from U.S. 45 in the Town of Clayton.

"This is just speculation, but maybe there was a big mountain exposed for millions of years that eventually wore down to become the western portion of the Fox River Valley," Clark said.

The hard limestone of the north and south running Niagara Escarpment, evident in the cliffs at High Cliff State Park, blocked the waters natural eastward flow. A rise in the land south of Fond du Lac for 10 to 12 miles shut off any possibility of water flowing on its traditional southward path.

So the ancient westward flowing tributary now flowed east and then north through Harrison.

The flow of that ancient Fox River, traveling parallel to, rather than cascading down one of the bedrock steps presented a very gentle northward flow.

The final of 20 glaciers to cross this area would change all that.

Clark said that about 10,000 years ago one great lobe of that final glacier paused for a five or 10 years during a period of colder weather.

That relatively brief halt resulted in the dropping of millions of tons of glacial till at the head to the ancient Fox River from Lake Winnebago, Clark said.

That respite by the glacier sealed Harrison's fate eons later at becoming a major industrial city borne of water power.

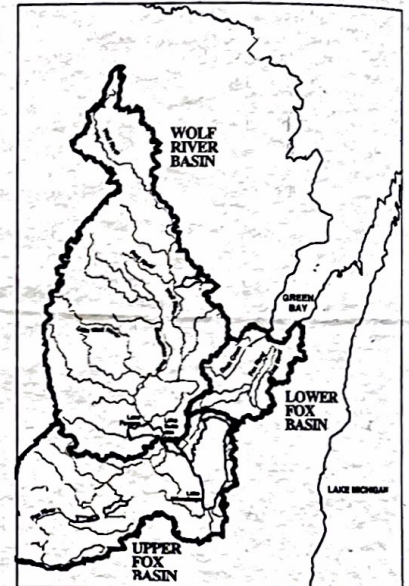
The huge mounds of silt blocked the northern outflow of the lake. The lake waters looked for a new low spot from which to flow freely.

That low spot just happened to be on the northwest corner of the lake which residents of Neenah and Menasha now call home.

"It was kind of a random, natural occurrence," Clark said.

Just west of Neenah and Menasha, the escaping lake waters met the path of pre-glacial tributary that still pointed toward Kaukauna.

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## Fox River has many waterways to thank for its power

By Roger Pitt

Post-Crescent Waupaca bureau chief

NEW LONDON — The Pflume, Radley, Leary, Spaulding, Comet, Peterson and Whitcomb are obscure names to most Fox Valley residents but they are a vital part of the system we call the Lake Winnebago Lake system and Fox River.

All are small creeks in the Wolf River watershed. The torrent of water flowing over a dam in Menasha or Kaukauna began as a simple drop in the many waterways which contribute to the millions of gallons a day that flow into Lake Michigan.

The Fox River is the whole of the sum which includes so many of the small waterways which flow into the Tomorrow/Waupaca, Little Wolf, Pigeon and Embarras rivers. All of these waters end up in the Wolf River in

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## Geology: Formation a tale of two rivers

"A river will try to take the shortest course it can," Clark said.

So the tributary, now flowing north and east instead of south and west, became the new river channel.

"It's called 'stream capture.' The tributary becomes the main channel," Clark said.

But the old tributary bed between Appleton and Kaukauna was filled with millions of tons of glacial till, Clark said.

In contrast, the banks of the ancient tributary were composed of harder clay which is more resistant to erosion.

The tilting contour of the land to the east forced the water to flow faster. The fast water washed away the less resistant glacial till, creating a deep channel and the high banks seen in the Appleton area today.

That nine mile stretch of the Fox River, from Appleton to Kaukauna, is the steepest along the

river's 39-mile path. In that stretch of river, which drops 15 feet per mile, is concentrated 80 percent of the fall of the lower Fox River and, consequently, 80 percent of the water power potential.

The rushing waters have washed away the glacial till and exposed the ancient bedrock.

"You can see the bedrock by the Appleton dams," Clark said.

The bedrock prevented the Fox River from becoming much deeper.

"We won't see it get any deeper in our lifetimes," Clark said.

Prior to the construction of dams and locks along the river from Neenah and De Pere, there were eight sets of rapids in the river.

Each set of rapids represented one of the bedrock steps in the stone stairway of land tilting to the east.

The eight rapids on the Fox River were at or near Neenah, Menasha, Appleton, Little Chute,

Kaukauna, Wrightstown, Little Rapids and De Pere.

Ironically, locks and dams installed before the turn of the century, well before the advent of unnatural amounts of polychlorinated biphenyls (PCBs) in the Fox River, contributed to their concentrations.

Clark recently completed research into PCB transport involving a deposit in San Juan Bay in Puerto Rico.

"PCBs cling to clay and silt, but even the slightest amount of current will keep them in suspension," he said.

"The locks and dams may be responsible for the concentrations of sediments containing PCBs, but if it weren't for those concentrations, the PCBs would have been deposited in Green Bay or somewhere else."

"On the plus side, the locks and dams probably served to localize the problem," he said.

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## System: Small waterways help feed Fox

Waupaca County alone.

All of those small creeks are within an hour of the Fox Cities in either Waupaca or Portage counties. Most are well known to Fox Cities trout fishermen.

There are countless others that contribute to the larger waterways of northern and central Wisconsin that make up the Wolf River basin.

The basin encompasses 3,690 square miles. It includes all of Waupaca County and parts of Forest, Langlade, Marathon, Menominee, Oneida, Outagamie, Portage, Shawano, Waushara and Winnebago counties.

The basin includes the entire Wolf River which flows in a southerly direction until it joins the upper Fox River just above the Lake Winnebago pool lakes.

The Wolf begins in central Forest County, a few miles from the Michigan border, and empties into Lake Poygan near Tustin in Winnebago County some 211 miles later.

You do not have a Fox River without the Wolf experts say.

"The Wolf River is vital to the system," Dan Helf, the state Department of Natural Resources team leader on the Wolf in Green Bay, said. "It all begins up there. It is the source of the fish in the Fox and Lake Winnebago."

Harlan Kiesow, head of East Central Regional Planning Commission, said, "The Wolf is the source of the majority of the water flowing through the Fox. It is like two rivers. The upper Wolf is a wild river with rapids and waterfalls. The lower Wolf, from Shiocton down, is more like the Fox as

it is a wide, slower moving water with very little variation in elevation.

"You can not separate them," Kiesow said.

And most people do not.

Residents along the Fox River were nearly as concerned about the Crandon mine issue as those on the Wolf River.

Problems flow down hill, like water, even if they are theoretical. People that reside in both areas wanted to be assured that there would be no pollution added to the waters and the ecosystem would be safe.

The problem with algae in the Lake Winnebago system is partly attributable to the nutrients and soil which is suspended in the waters which enter it from the Wolf River basin, experts say.

"The quality of water anywhere along the two rivers affects everyone," Kiesow said. "The people in the Green Bay area is an indication of concern as they are worried about the currents of the Fox carrying PCBs from up river and depositing them in the bay."

"The Fox is more a working river," Kiesow said. "There are more dams along it and more industry. But there are still impoundments on the Wolf. North American Hydro is generating electric power at some areas."

Helf said, "The Wolf River is like the nursery to the Winnebago system and Fox River. It is where walleye, sturgeon and white bass go to spawn. The levels of the lakes are affected by the amount of water flowing down the Wolf."

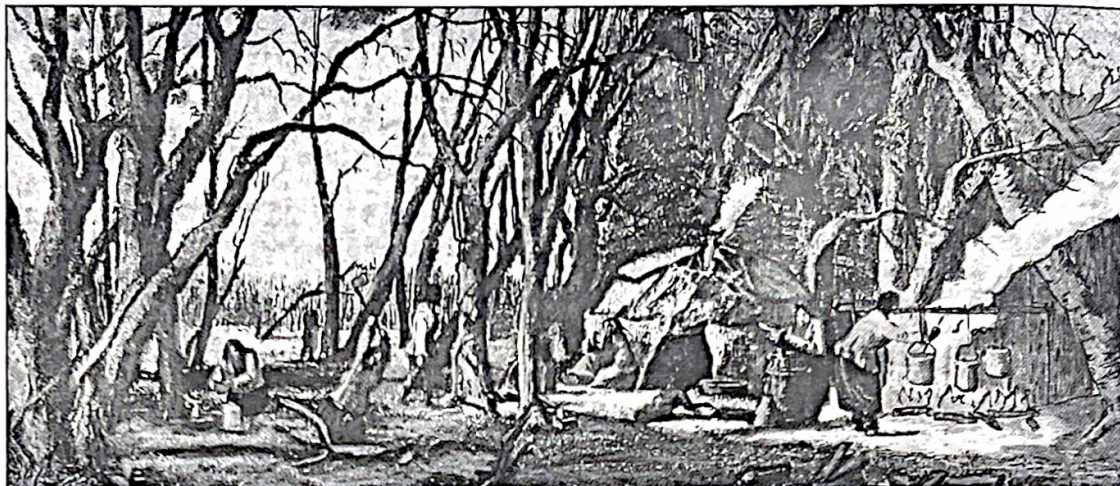
"It is one big system that works together," Helf said.



Photo courtesy of Menasha Public Library

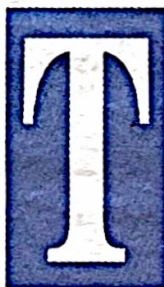
**A HISTORIC** photograph, circa 1915, of Hammer's Island in Little Lake Butte des Morts. It later became known as Burt's Island, and finally James Island.

## NATIVE AMERICAN HISTORY



# Shores of Fox River are rich with tradition, legend of Native Americans

By Susan Squires  
Post-Crescent staff writer



he Winnebago were not the people French explorer Jean Nicolet imagined would meet him at the mouth of the Fox River in 1634.

"(He was) dressed in a fancy damask robe designed to stun the Orientals he expected to find there," Michael J. Goc wrote in his historic account, "Land Rich Enough".

The Winnebago served a generous feast of 150 beaver in Nicolet's honor. Such was the plentitude of life the Fox River nurtured then.

Just as the natural wealth of the river sustained the tribes, though, in inestimable commercial value as a link between the Mississippi River and the Great Lakes eventually led to their systematic extraction from its shores.

No one knows whether it was the Winnebago or Menominee Indians who first lived in the Fox River Valley. The earliest recorded Menominee village was on the western shore of Green Bay.

"Menominee" means "wild rice people," and was apparently conferred on them by other tribes because of the Menominee dependence on wild rice they harvested from river and lake beds.

The first Winnebago village in Wisconsin seems to have been at Red Banks, on the Door Peninsula.

According to historians, the two tribes frequently hunted communally, and sometimes traveled

## • CHRONOLOGY OF FOX RIVER TRIBES •

- **1630:** Menominee and Winnebago villages built along the river; Iroquois wars begin to drive Algonquian tribes into Upper Michigan, then to Wisconsin.
- **1634:** French explorer Jean Nicolet arrives at Green Bay.
- **1663:** French and Indian War ends, freeing the French to pursue the fur trade.
- **1680-1733:** Fox, or Outagamie, Indians dominate the Fox River.
- **1761:** French rule ends, British begins.
- **1776-1812:** British influence ebbs, American begins.
- **1804:** Fox Indians cede remaining Wisconsin lands to the federal government.
- **1817:** Menominee recognize sovereignty of U.S. government
- **1812:** Fox Indians, angry over the 1804 cessation, start the Black Hawk War.
- **1821:** Menominee and Winnebago cede 804,000 acres along the Fox River to a group of Indians from New York: the Oneida, Stockbridge, Munsee and Brotherton tribes.
- **1822:** Menominee cede additional land to New York Indians.
- **1822-1825:** New York Indians begin immigration to Wisconsin.
- **1836:** The Menominee sign the Treaty of the Cedars near Kimberly, ceding 4 million acres to the federal government.
- **1837:** Winnebago cede their Wisconsin lands to the federal government.
- **1838:** Oneida land holdings reduced to 65,000 acres.
- **1848:** Menominee sell the rest of their Wisconsin land for \$350,000 and 600,000 acres in Minnesota.
- **1850:** Chief Oshkosh finds Minnesota lands unacceptable.
- **1854:** Menominee Indian Reservation established on the Wolf River.
- **1995:** Menominee sue to regain hunting and fishing rights on the ceded lands.
- **1996:** U.S. District Judge Barbara Crabb dismisses suit.
- **1997:** Menominee appeal.

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## WATER HELPS POWER DREAMS

# Early entrepreneurs harnessed the wild Fox River with paper mills, dams, locks

By Michael King  
Post-Crescent staff writer

**B**efore the Fox River was tamed by dams, canals and locks, its waters flowed rapidly in various places as the river descended 170 feet over its 39-mile route from Neenah to Green Bay. Lured by the promise of water power, fertile soil and abundant timber, a parade of businessmen armed with an entrepreneurial spirit and some investment capital made their way from the East Coast to the territory now known as Wisconsin in the mid-1800s. They knew the natural power of flowing water symbolized industrial potential, able to turn water wheels as an inexpensive source of power that made factories possible.

Sawmills and grist mills were among the first businesses to harness the water power found on the fast flowing rapids of the north and south branches of the Fox River as they left Lake Winnebago on its way to Little Lake Butte des Morts.

By 1851, the dams in Neenah and Menasha were completed. The following year a plank road between Menasha and Kaukauna was completed, adding to the transportation options serving the growing industrial center of Neenah-Menasha.

During this time, wheat had become the state's primary crop. Soon, there were 11 flour mills in Neenah, which became known as "flour city," and four more in Menasha.

The Twin Cities flourished as a flour milling center during the 1860s. But, when Minneapolis emerged by 1870 as the flour milling capital of the west, some mill operators began to explore other options.

"It was just natural to go from milling flour to paper machines," said George Mueller, former president of Wisconsin Tissue Mills, Menasha. "Sites were selected to, in effect, harness that power."

By taking over old flour mill or sawmill sites, or establishing new water power sites, early industry pioneers had ready access to a key ingredient. Papermaking required large volumes of water for turning machinery and for washing rag fibers, the raw material used to make the first papers produced in Wisconsin.

As chairman of the Paper Industry International Hall of Fame, Mueller is well-versed in the industry's history. "While (water power), in a sense, gave birth to the industry, the thing that made it successful was the entrepreneurial bent of the founders," he said.

The state's first paper mill started in Milwaukee in 1848, producing newsprint from rags for the Milwaukee Sentinel & Gazette, according to "A History of the Wisconsin Paper Industry: 1848-1948."

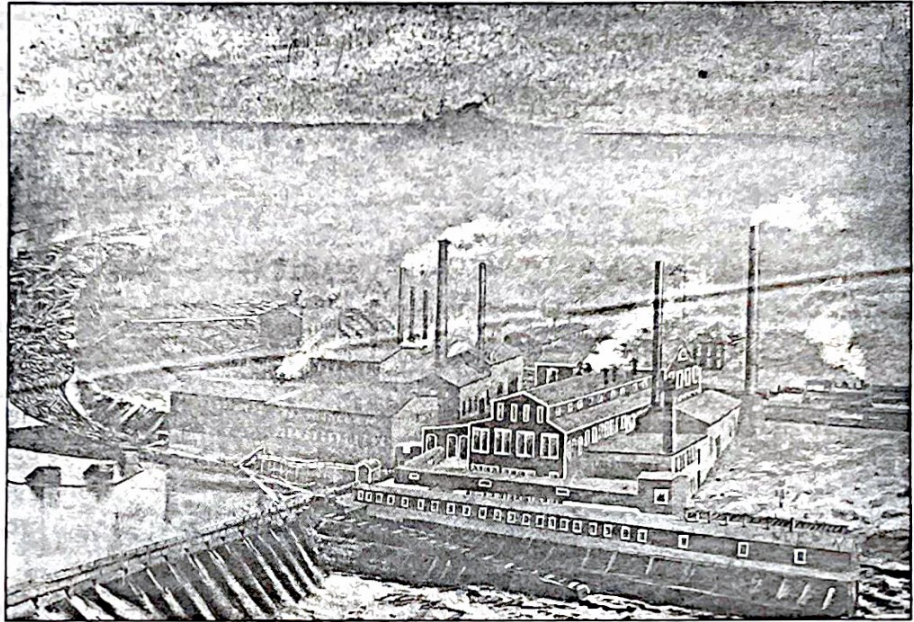


Photo courtesy of Menasha Public Library

**THIS HISTORIC** painting illustrates how early entrepreneurs worked to harness the river's power.

The Fox River Valley's first entry into the industry came in 1853 with the establishment of the Richmond mill in Appleton by three brothers: G.N., C.P. and T. Richmond. It produced a very coarse grain rag paper and straw wrapping paper. A year later, the mill was destroyed by fire but within months, it was back in operation at a location on John Street below the College Avenue bridge.

Neenah's first paper mill was built in 1865-66 on the site of the old government sawmill. Originally known as the Neenah Paper Mill, it was reorganized in 1870 as the Smith & Van Ostrand Co. Later, it was renamed the Neenah Paper Co.

While flour milling had become Neenah's pri-

mary business, four young businessmen with concerns about its future as a flour milling center decided papermaking held greater promise for the future. So, in March 1872, John A. Kimberly, Charles B. Clark, Frank C. Shattuck, and Havilah Babcock invested \$7,500 apiece to start the Globe mill which produced newsprint from rags on the south branch of the Fox River.

From that origin, their enterprise has since blossomed into a worldwide consumer products giant. Today, Kimberly-Clark Corp., which has been the Fox Valley's largest employer for many

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**"It was just natural to go from milling flour to paper machines. Sites were selected to, in effect, harness that power. While (water power), in a sense, gave birth to the industry, the thing that made it successful was the entrepreneurial bent of the founders."**

**GEORGE MUELLER**, former president of Wisconsin Tissue Mills, Menasha



## 'LIFEBLOOD OF THE VALLEY'

# In the Fox River Valley, nothing can rival consistent paper industry

By Michael King  
Post-Crescent staff writer



Every time George Mueller sees a new housing development or a new school spring up in the Fox Valley, he views it as a subtle reminder of the economic influence of the paper industry.

Mueller retired 10 years ago as president of Wisconsin Tissue but in his 21 years with the fast-growing Menasha paper mill he recalled only one week of shutdown due to a lack of orders. "We shut down other times to rebuild machines but that's it," he said.

That stability, which is the hallmark of the industry

that drives Wisconsin's economy, illustrates how, over the years, the thousands of employees could count on their weekly paychecks.

"In good or bad times, they can pretty much go home every day and figure there will be a job tomorrow and there will be a paycheck," Mueller said.

Clearly, the paper industry's consistency has been a boon to the area. "And, that radiates out into the retail businesses, the school system, the professions, the doctors and lawyers. This is a hell of a of a great place to be if you can stand the weather," he said.

"The industry has been, and continues to be, an economic dynamo," said Thomas Schmidt, president of the Wisconsin Paper Council. "For all practical purposes, it's the economic lifeblood of the Fox River Valley."

With an average of 26,000 employees in the area's

According to June 1998 statistics, the average weekly wage for manufacturing jobs in Wisconsin was \$582.13. That compares to an average weekly wage of \$776.14 for paper and allied products and \$857.08 for paper mill jobs.

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CONTINUED FROM PAGE 7

## Power: Valley's resources helped fuel dreams

years, employs over 60,000 people worldwide with annual sales of more than \$12 billion.

Two years after it was founded, the Kimberly, Clark & Co., named after its managing partners, began the company's aggressive growth track by acquiring the Neenah Paper Co.

By 1878, Kimberly and Clark were approached by Appleton businessmen who encountered difficulties opening a mill to produce groundwood pulp. They went on to manage and hold majority ownership in the new Atlas Paper Co., which eventually was sold to K-C in 1907.

Along the way, K-C built a pulp and papermaking complex on the Fox River in 1889, creating the community of Kimberly.

Another Appleton mill, the Patten Paper Co., Ltd. was started in 1873.

A year later, Patten officials built a mill in Neenah that featured a new Fourdiner paper machine which produced print, book and manila paper from old paper stock.

Later, the Patten mill in Neenah became part of the new Neenah Paper Company which organized in March 1885. It produced rag content or cotton content papers.

While cotton or linen rags and straw were the primary raw materials used in paper production prior to 1880, a major step for the burgeoning paper industry was development of the Keller groundwood process, which allowed paper to be made from wood pulp from trees.

The Western Wood Pulp Mill, which started in Appleton in 1872, was a pioneer in wood pulp manufacturing.

According to the Wisconsin Paper Council,

Col. H.A. Frambach became the first to install a machine for grinding pulpwood logs when he co-founded a mill in Kaukauna.

The Frambach & Stovekin mill, which was also referred to as the Eagle mill, was completed in 1873-74.

Frambach also helped organize the Menasha Paper Pulp Co. in 1880 and the Badger Paper Co. mill in Kaukauna in 1886.

The founding of the Gilbert and Whiting mill on the west end of the canal in Menasha in 1881 was one of many paper ventures of George A. Whiting. By 1886, Whiting bought out his partner, William M. Gilbert, of Chicago, and the name was changed to the George A. Whiting Paper Co.

In 1883, a flour milling firm in Appleton reorganized to add papermaking. Renamed the Fox River Flour & Paper Co., the paper venture proved so successful that the flour milling was discontinued within four years and new paper equipment added.

The name was subsequently changed to Fox River Paper Co., which produced four tons a day of high-grade rag writing paper.

Today, Fox River Paper is one of the top two U.S. producers and sellers of premium writing, text and cover papers.

Farther down river in Kaukauna, a German immigrant Oscar Thilmany, established the Thilmany Pulp & Paper mill in 1883. By 1897, the mill had five paper machines.

Later, Thilmany built one of the first sulphate pulp mills next to the paper mill. It produced kraft pulp, which was used in the development of papers of unusual strength, pliability and resistance to

moisture.

From pure bleached sulphate pulp, Thilmany produced amber waxed carton lining paper, which revolutionized packaging of food products.

A year after he parted company with Whiting, William Gilbert founded the Gilbert Paper Co. in 1887 along the newly dug Lawson canal. The new mill was considered one of the finest mills in the world producing cotton fiber paper.

Gilbert, which remained a family-owned paper mill until its 1960 sale to Mead Corp., Dayton, Ohio, was considered a pioneer in the industry in a number of areas. Among its claims was to become the first paper mill to use an air-drying process and the first to combine wood pulp fibers with rag fibers.

Also in Menasha, the John Strange Paper Co., which was founded in 1881 as a manufacturer of wooden pails and tubs, began making paper in 1888.

Today, the Fox River Valley is considered the core of the paper industry in Wisconsin, which has been the nation's leading paper producing state since 1953.

Wisconsin paper mills, which are primarily specialty papermakers, not commodity producers, have found their niche in the competitive industry. State mills produce high quality papers, thanks in part to its highly-educated work force and a commitment by industry leaders to make capital investments that keep machinery and equipment in top form.

"They've all found their niche markets that they specialize in," said Thomas Schmidt, president of the Wisconsin Paper Council.

CONTINUED FROM PAGE 8

## Paper: Valley boasts consistent lifeline

pulp and paper industry, roughly half of the state's overall total, it provides a tremendous wage base for the local economy.

Using the state Commerce Department's multiplier effect of 2.4 jobs created for each paper industry job, "there are another 60,000 plus people that are, in effect, depending upon the economic good fortunes of the paper industry," according to Schmidt.

They work for various suppliers or service businesses allied to the industry.

"It's a ripple effect that is extremely important. The money they spend in grocery stores, auto dealerships, new home construction, down the line, a lot of it is attributable to the paper industry," Schmidt said. "That's a tremendous economic impact."

Long considered the backbone of the Fox Valley economy, papermakers play a significant role statewide.

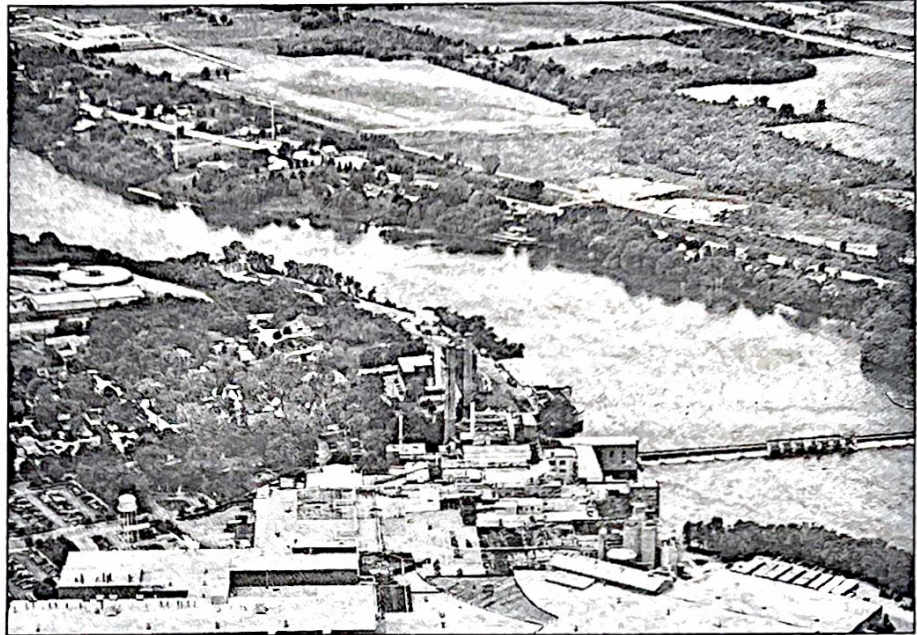
According to August Cibarich, labor market economist for the state Department of Workforce Development, the paper and allied products sector employed 54,800 people statewide in June of this year. That was up 1,400 from a month earlier and 300 from June 1997.

In the Appleton-Oshkosh Metropolitan Statistical Area, which includes all of Outagamie, Winnebago and Calumet counties, there were 20,600 people employed in the paper and allied products sector in June. That total was up from 20,300 in May and 20,500 from a year earlier.

By comparison, the Green Bay MSA, which includes all of Brown County, had 8,900 paper and allied employees in June, up 300 from May but down 100 from 9,000 in June 1997.

"In many of the communities around the state where they have a paper mill, that's the high wage industry," said Cibarich. "None of the other manufacturing industries pay as much."

For many years, paper mill jobs have been coveted. "They are the place that most people strive to



Post-Crescent photo by Mike De Sisti

**THE FOX RIVER** flows past the Inter Lake Paper plant in Kimberly. Wisconsin is the nation's leading paper-producing state, a distinction held since overtaking Michigan in 1953.

The only industry that comes close to paper industry manufacturing wages is the transportation equipment sector (automobile manufacturing and parts production) which pays an average of \$18.61 an hour. But, most of its 34,100 employees are located in Janesville, Kenosha and the Milwaukee area.

only 2 percent of the U.S. population, but its paper production amounts to 11.4 percent of the nation's total output.

Schmidt credits paper industry officials with maintaining such a strong presence. "Leadership has been very strong here in this industry for years," he said.

Mueller is a prime example, as he helped transform Wisconsin Tissue from a small, family-owned paper mill into one of the Fox Valley's largest employers and a national leader in the industrial and institutional tissue markets.

Born in 1921, Mueller was raised in Sherwood during the Depression. "Our family business went to hell after my father died (in 1930)," he said.

But, he saw how well the paper industry weathered the Depression while other manufacturing segments suffered so he set his sights on the future. He attended Lawrence University, where he majored in chemistry and minored in physics and math. Eventually, he joined Marathon Corp., which was one of the world's leading food packaging companies, as a research and development scientist.

In 1968, Mueller left Marathon to become vice president of manufacturing at Wisconsin Tissue. After a few years, he convinced James Asmuth, president of Wisconsin Tissue, to build its own wastewater treatment plant in 1972, a key move

**"It's a ripple effect that is extremely important. The money they spend in grocery stores, auto dealerships, new home construction, down the line, a lot of it is attributable to the paper industry. That's a tremendous economic impact."**

THOMAS SCHMIDT, president of the Wisconsin Paper Council

get into," Cibarich said. "If you want to work in blue-collar type work, that's usually the highest paying."

According to June 1998 statistics, the average weekly wage for manufacturing jobs in Wisconsin was \$582.13. That compares to an average weekly wage of \$776.14 for paper and allied products and \$857.08 for paper mill jobs.

On an hourly basis, including overtime, that translates to an average wage of \$13.96 per hour for all manufacturing, \$17.52 for paper and allied jobs and \$18.92 for paper mill jobs.

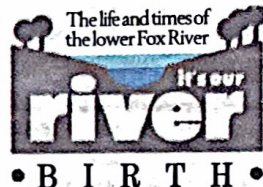
Because Wisconsin is the nation's top paper-producing state, a distinction it has held since overtaking Michigan in 1953, paper is big business.

Wisconsin paper mills are specialty oriented, not really commodity producers. That has helped shield the industry from the peaks and valleys of the commodity markets.

The industry also produces high-quality papers, thanks in part to its highly-educated work force and capital investment to keep machinery and equipment in top form.

Wisconsin's 5.25 million population constitutes

Please see PAPER, Page 10



## CLUSTER OF PAPER MILLS

# Paper jam shows Fox River as power center in U.S. paper industry

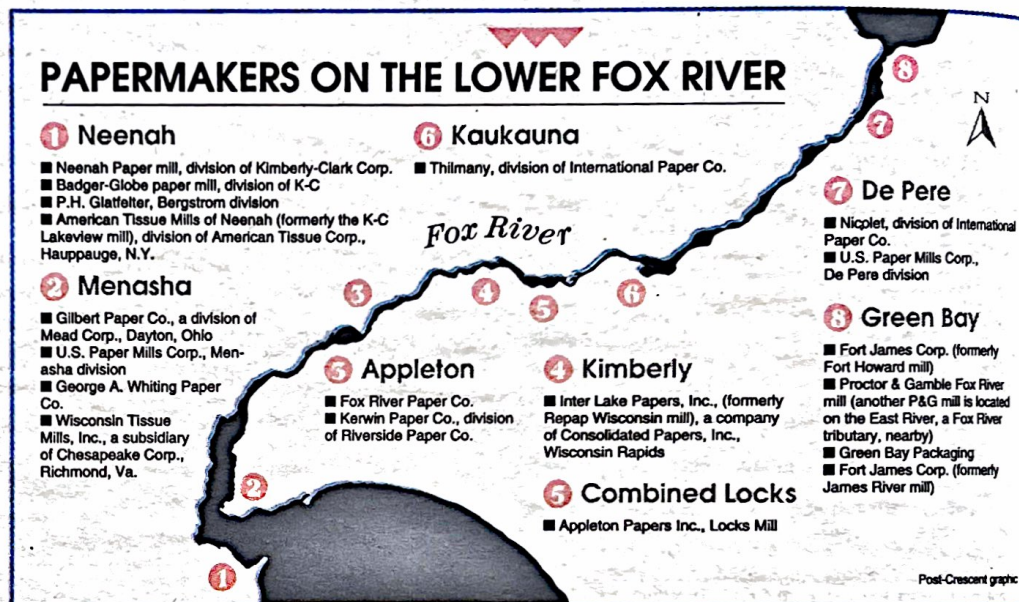
By Michael King  
Post-Crescent staff writer

As long as anyone can remember, the Fox River Valley has been known as having the largest concentration of paper mills of anywhere in the world.

Between Neenah and Green Bay, primarily along the 39-mile stretch of the lower Fox River, are 18 corporations with pulp manufacturing, paper manufacturing and/or corporate offices. All told, those firms have 74 paper machines in operation, according to the Wisconsin Paper Council.

Papermakers in Winnebago, Outagamie and Brown counties account for about half of Wisconsin's total production of roughly 4.9 million tons. Since the state has been the nation's leading paper producer for the last 45 years (1953), there is no doubt that the Fox River Valley is a power center in the U.S. paper industry.

The map at right shows area firms with actual papermaking facilities located along the Lower Fox River:



CONTINUED FROM PAGE 9

## Paper: Valley boasts consistent lifeline

which set the stage for future growth.

Mueller credited the Asmuth family for selling the mill in 1977 "to a good company (Phillip Morris) which they knew would provide capital to spend" on mill improvements. He also credited Wisconsin Tissue employees for their dedication and productivity.

In 1979, Phillip Morris announced an \$82 million expansion, the largest the Fox Cities had ever seen, to add paper machine No. 3.

Eight years later, after Wisconsin Tissue had been sold to Chesapeake Corp. in April 1985, approval was given for another major expansion, a \$148 million project.

Since Mueller joined Wisconsin Tissue in 1968, the mill's sales have grown from roughly \$20 million to \$400 million "and rising" today.

Today, Wisconsin Tissue has 1,887 employees and an annual payroll of \$80 million. Its 1997 sales were \$425, compared to \$238 million in 1992.

Statewide, employment in the industry has plateaued in recent years but production in the mills has continued to increase. Unlike the past,

when new paper machines created numerous new jobs, installation of today's computer-operated paper machines can be accomplished often using existing manpower.

"It's remained the leading influence (on the state's economy) but it hasn't really grown" Cibarich said.

"If anything it's drifted down in employment because modern machinery is much more efficient. They are producing more paper with the same or less employment."

Still, there is a positive economic impact elsewhere with construction jobs and added work for suppliers or service sector companies allied with the paper industry.

"Will the industry continue to be the economic dynamo of the area and the fuel that drives the economic engine? I think it will," Schmidt said.

Beyond millworker wages and management salaries, paper companies have made additional investments in the communities in which they operate.

Mueller said credited good local management at

area paper mills and their community-minded approach to being good corporate citizens as the key ingredient.

"I just have a firm belief that there is nothing quite as important to a community than having key folks in industry sympathetic to the local community," Mueller said.

"When you get to become international companies, it's not always easy to do.

"Most area businesses are continually turning money back into the community," he said.

Kimberly-Clark Corp. has a long history of investing in the local communities.

In the mid-1980s, Chesapeake, at Mueller's request, was a major contributor to the redevelopment effort which led to the Harbour Place office building, which houses Wisconsin Tissue corporate offices, and the 87-slip marina.

Wisconsin Tissue has made charitable contributions of more than \$120,000 annually while its parent company has contributed more than \$225,000 annually through its Chesapeake Foundation.

## SMALL BUT POWERFUL

# Frank Whiting's company endures amid shadows of paper industry giants

By Michael King  
Post-Crescent staff writer



As the fourth generation to operate the mill that bears the family name, Frank B. Whiting knows what it takes to survive in the competitive paper industry.

Founded by his great-grandfather, Col. George A. Whiting, in 1882, the mill at the end of River Street here is perhaps the smallest of the many paper mills located on the lower Fox River.

But, the George A. Whiting Paper Co. has endured by moving into various niche markets to produce specialty papers.

Originally called the Gilbert and Whiting mill, due to Col. Whiting's partnership with William Gilbert of Chicago, it utilized the water power from the government canal on the Menasha branch of the Fox River.

Four years later, Whiting bought out Gilbert, who went on to start Gilbert Paper Co., another paper mill which still exists today about a half mile to the east.

"Initially, mills were run by a combination of steam power and water power," Whiting said. "Steam turbines along with water wheels that rolled everything prior to electrical (service availability)."

The first mill was destroyed Aug. 23, 1888, when disaster struck. A fire and explosion killed 14 people, all of them onlookers. "I believe that water was put on the cooker or bleaching and that caused it to explode," Whiting said.

That shut down operations for seven months until the mill could be rebuilt. Its original Beloit Iron Works paper machine is still in existence but has endured numerous rebuilds.

"They considered our machine a monstrous large machine in those days," said Whiting. "Today, it's barely larger than some lab machines."

For a mill that specializes in short run custom orders, Whiting got its start, ironically, as a commodity producer of rag content newsprint.

"If you have a newspaper from 1883 that was printed on our paper, it's (still) in pretty good shape," Whiting said.

Around the turn of the century, the mill changed from producing newsprint to fine papers but it still used rags as its primary raw material. Soon, chemical wood pulp was becoming available and the combination of rags and wood pulp was the way to make fine papers.

"Over the next 20-30 years, the mill eventually evolved into a non-rag producer of ledgers and writing papers, sulfite type bonds," Whiting said.

The evolution continued in subsequent years as

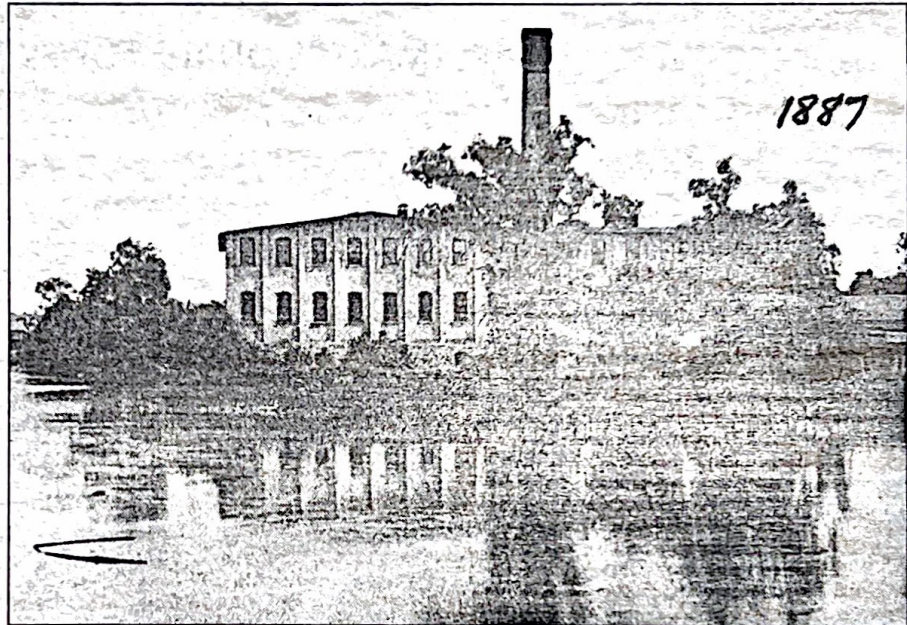


Photo courtesy of Menasha Public Library

THE MENASHA CANAL, circa 1887, near the locks and the George A. Whiting Paper Co.

Whiting produced mostly text and cover papers. Later, it specialized in colored and textured papers commonly found in greeting cards, announcement cards as well as brochures and annual reports.

"The last 10-15 years, we're now 100 percent recycled making special runs for our customers to order," Whiting said.

Perhaps its largest market over the past decade has been papers for picture matting. Whiting's acid-free papers are laminated to a paperboard for picture frame mats.

"There are 400 or 500, maybe 600 colors a year we make," Whiting said. "It's mostly short-run business and it's all custom color making."

The ability to change has been important to the mill's success.

"It more a matter of fitting the product to the machinery," Whiting said. "As larger companies got into areas in which we were specializing, we were forced to look for new opportunities in other areas where our particular machinery was more suited."

"We've always had the philosophy where we will seek out niches in which we can be, not only competitive, but possibly the dominant player in that niche," Whiting said.

"Changing over to the alkaline process and going 100 percent recycled was a major move on our part," said Whiting, who has been in charge since

his father George A. Whiting II, retired in 1975.

Over the years, employment, which stands at 55 today, has been very stable. But, a slight decrease occurred over the past 20 years by changing to shipping paper in rolls rather than the more labor-intensive sheet operation.

Whiting, who studied economics and business at Lawrence University and Ripon College, says the Fox River's role in the development and ongoing prosperity of the area's paper industry is pretty unique.

"I have visited a lot of areas where they have papermaking and I can't think of any area where they have as many mills on one river," Whiting said.

"Certainly when you add in all the secondary companies which support the paper industry, it's probably a huge percentage overall of the economy," he said.

Whiting removed its water wheel from use eight years ago. "With the control of the dam in Menasha, the water levels on Lake Winnebago have not been sufficient to run the water wheel more than a few months out of the year," Whiting said.

The mill will almost surely see a fifth generation of family operation since Whiting's daughter, Kristina, and son, George A. Whiting III, work there.

# Pioneer Doty first recognized Fox River would be Neenah's lifeline

By Duke Behnke  
Post-Crescent staff writer



Historian Nathan Wauda credits pioneer James Duane Doty for first recognizing the tremendous potential of the lower Fox River.

Doty, a territorial judge from Michigan, had studied maps of the area and was intrigued by the river's flow north to Green Bay. In 1820, while exploring the frontier's waterways, he canoed Lake Winneba-

go from Oshkosh to present-day Neenah.

As he rounded the Neenah point, he encountered a beautiful expanse of trees, friendly Indian villages and a river with rapids teeming with fish.

"He realized this headwater was something big," Wauda said, adding that Doty knew the river fell 170 feet in 39 miles to Green Bay. "He thought the area would someday be a place for sawmills and grist mills."

Doty was right, of course, though the dominant industry evolved into papermaking.

The Fox River was the source of life for Neenah, perhaps more so than any other community along its banks.

The river lured American Indians here with beauty and the promise of fish, game and transportation. Its strong flow from the lake attracted entrepreneurs from the East and then powered their machines to extraordinary wealth.

The settlement initially was given the name Winnebago Rapids, when the federal government built homes and mills along the south bank in a failed agricultural project for the Menominee. Doty later coined the name Neenah, the Menominee word for water.

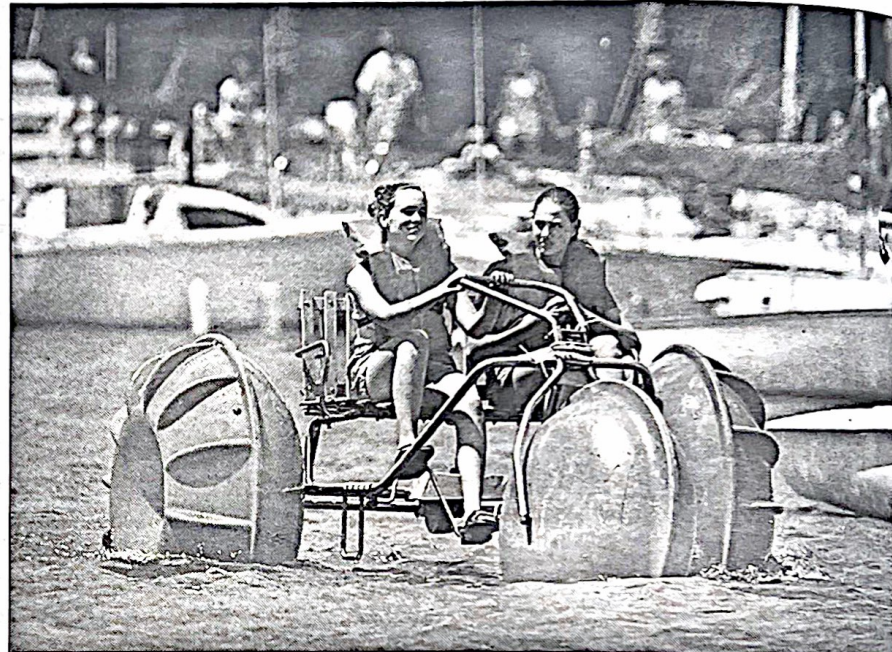
Harvey Jones, a New Yorker who helped found Neenah, was among the first to capitalize on the power of the river in the late 1840s, digging a canal and repairing the government mills. He died in 1849, but the sawmill run for the benefit of his heirs was one of the first successful businesses in Neenah.

Jones also spurred the construction of the first dam in Neenah, completed in the 1850s.

"That dam, they didn't realize at the time, became the controlling factor on the Fox River from Neenah to Green Bay," Wauda said. "For many years and still to this day, it controls the water power in all of those mills."

Brothers John R. and Harvey L. Kimberly arrived from Troy, N.Y., in 1849 and soon built the Neenah Flouring Mill along the south shore of the Fox River, where the Badger-Globe Mill stands today.

Others, aided by the completion of the Fox River as a navigable waterway and the arrival of the



Post-Crescent file photo by Sharon Ossa

**ELIZABETH ROTH** (left) and Jackie Seaver, both of Neenah, enjoy a relaxing ride on the Aqua Bike near Riverside Park in Neenah. The Fox River was the source of life for Neenah, perhaps more so than any other community along its banks.

**"That dam, they didn't realize at the time, became the controlling factor on the Fox River from Neenah to Green Bay. For many years and still to this day, it controls the water power in all of those mills."**

**NATHAN WAUDA**, historian

railroad, soon followed. Neenah became known as "Flour City," with 11 mills operating at one time. The output from Neenah and Menasha flour mills was second only to Milwaukee.

The huge Reliance Flour Mill, built by John R. Kimberly and Havilah Babcock in 1868, was "one of the finest mills anywhere around, powered by the Fox River," Wauda said.

By the 1880s, the city's flour industry was fading to the Pillsbury Co. in Minneapolis, and the locals turned their attention to the profitability of

papermaking.

Hiram Smith was behind the first paper mill, called the Neenah Paper Mill, which was built in 1865 on the site of the old Jones sawmill. Its success intrigued others who had become concerned with the long-term future of flour milling.

Among them were John A. Kimberly, Babcock, Charles B. Clark and Frank C. Shattuck, who in 1872 formed Kimberly, Clark & Co. (now Kimberly-Clark Corp.) and built the Globe Mill on the river's south bank about 300 feet west of N. Commercial Street.

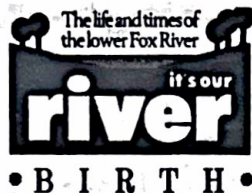
The paper mill prospered almost from the beginning and, in turn, interested others like Asa W. Patten (Patten Paper Co.) and John R. Davis and George Whiting (Winnebago Paper Mills).

In 1874, Kimberly, Clark & Co. began a never-ending expansion with the purchase of the Neenah Paper Mill farther to the west.

Two years later it enlarged the Globe Mill, making it the biggest in the city.

The company wanted to grow further in the late 1870s but was unable to obtain additional water power in Neenah, so it extended its operations to

Please see **NEENAH**, Page 13



## RIVER TOWN: APPLETON

# Over the centuries the Fox River has served a number of purposes

By Pete Bach

Post-Crescent staff writer



erry Fisher of Appleton said the Fox River begged to be tamed.

"Somewhere in the 1800s our government decided this river had to go to work," he said. "The Army Corps (of Engineers) is funding that water level. Reliable power came along with it."

As a member of the city's Riverfront Advisory Committee, Fisher keeps tabs on the condition of the river and

watches ways in which its use can be enhanced.

Over the centuries, the river has been many things and served myriad purposes.

It's been a fluid highway for transportation.

A recreational route for vessels as varied as paddlewheelers and canoes.

A power source.

And, most notably, a ready source of water for paper manufacturing.

"Our whole economy was built on it. There's no

doubt about it — paper built the Valley," said Appleton City Atty. Greg Carman.

It was actually flour milling that marked the first industrial uses of this working river, but that pursuit would rapidly give way to paper manufacturing.

In all, 22 paper mills between Lake Winnebago and Green Bay were established owing to the tremendous water power to be harnessed.

The river became Appleton's lifeblood, with the city's first permanent inhabitants gravitating toward the water's edge.

The city's first settlement began on the river near the present day Alicia Park. Just above the so-called grand chute (waterfall) of the river, in 1835, Hippolyte Grignon built a trading post and home known as the White Heron.

Twelve years later, on a bluff not too far downstream, Lawrence University — then a college — was born.

And fast on the heels of that first coeducational institution of higher learning in Wisconsin came yet another milestone. It was the damming of Lake Winnebago — at Neenah in 1849, at Menasha three years later. Other dams — three in Appleton, one each in Kimberly, Little Chute, Combined Locks and two in Kaukauna — would be paired with nav-

igation locks to complete the picture, ushering in an era of commercial navigation that would see a host of vessels ferrying people and pulpwood, coal and cargo through Appleton well into the mid-20th century.

Please see **APPLETON**, Page 14

**"Our whole economy was built on it. There's no question about it — paper built the Valley."**



**GREG CARMAN**, Appleton City Attorney.

CONTINUED FROM PAGE 12

## Neenah: Water the life source for city

Appleton.

"In the long run, this decision assured that Neenah-Menasha would not become the industrial capital of the Fox Valley," Charles Glaab and Lawrence Larsen wrote in the 1969 book "Factories in the Valley."

By 1884, Kimberly, Clark & Co. had acquired two flour mills next to the Globe, including the Reliance, and built the Badger Mill, which abuts N. Commercial Street. A year later it replaced its Neenah Paper Mill with a new facility.

In all, the Fox River supplied both the power and the water required to make paper. Neenah literally grew from the shore of the river.

"It's quite a chronology of success, all based upon the beautiful river, not only beautiful for scenery and transportation, but what it did for industry and to get people to come here from all over the country," Wauda said.

"For 50 years, water was what kept it going. Water was the source of power."

The development of the downtown and residential areas also traced the river. Retail activity began along the Neenah canal, and some of the grandest homes in the city, and in all of Wisconsin, were

built along E. Wisconsin Avenue and on the point that Doty rounded in 1820.

Today, the importance of the Fox River appears to be lost on the Neenah populace. The river still provides the water needed for papermaking, but it no longer powers the machinery. And it's been decades since the river played a significant role in transportation or pleasure excursions or was a major source of fish.

Only on the Fourth of July, when tens of thousands of people gather at Riverside Park for the city's annual Venetian Boat Parade and fireworks display, is it a focal point.

Mayor Ken Harwood, a sailing enthusiast, wants to change that. He believes the river and the Neenah harbor can play a greater role in the community, aesthetically, economically and recreationally. He notes the city's new public library will focus on the river.

"We fail to see the beauty and the resource that we have," he said. "I often chastise the people who have been sailing in the community for 20 years for keeping it a secret."

Harwood wants to develop a means to draw Lake Winnebago boaters to downtown Neenah

and Doty Island for shopping, dining and entertainment. Menasha and Oshkosh have had success with that.

A draft of Neenah's new comprehensive plan, which is to guide the city's development for the next 20 years, also recognizes the potential of the Fox River.

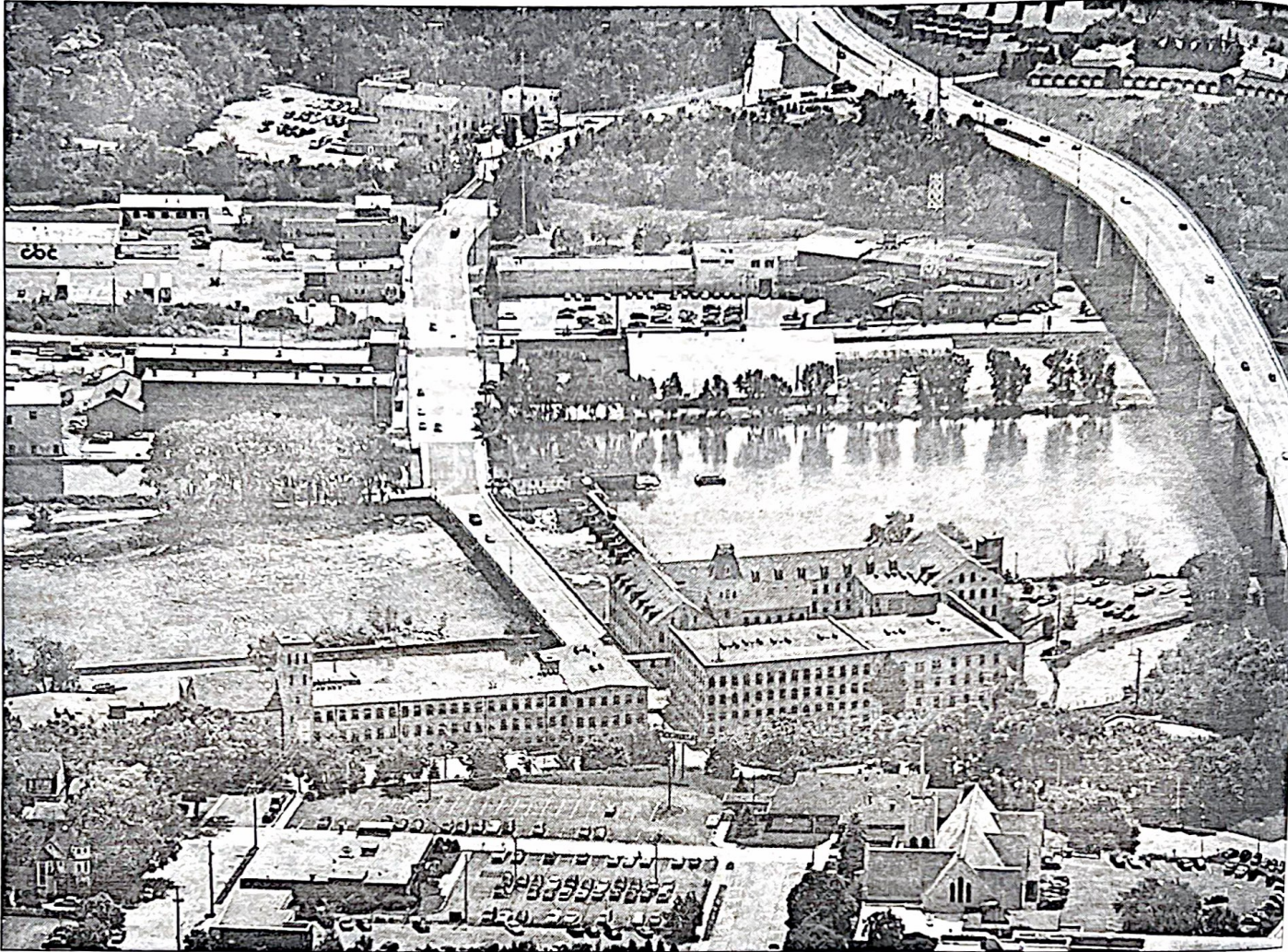
"The area's waterways and natural beauty attracted the earliest settlers here and, despite the urbanization of the last 100 years, remain as one of our community's finest assets," the report says.

Director of Community Development Bob Buckingham said the comprehensive plan will provide a general initiative to improve public access to the river. It will not identify specific sites for redevelopment, however.

"Anything along the riverfront is an opportunity," Buckingham said.

■ For more information on Neenah's past, contact the Neenah Historical Society at 920-729-0244. For additional information on Neenah's comprehensive plan, contact the Department of Community Development at 920-751-4660.

CONTINUED FROM PAGE 13



Post-Crescent photo by Sharon Goss

THE FOX RIVER boasts a history of change, and, if Valley investors have their way, that tradition of evolution will continue.

## Appleton: River has played many roles

Right across the river from the campus, along the south bank, the Vulcan Street Power Plant would make history for Appleton.

Techniques mastered by inventor Thomas Alva Edison were pressed into service at the world's first independent hydroelectric plant, which began operation in 1882. Its generator operated at 110 volts and was driven through gears and belts by a water wheel operating 10 feet under water. The plant powered electric lights at the historic Hearstone mansion on the bluff at Memorial Drive and Prospect Avenue.

The locks still boast water-intake technology identical to that when the operation began nearly

150 years ago, according to a task force that studied the system in 1988.

For all its allure, the river still lacks certain refinements. You won't find a restaurant on the Appleton waterfront, said Val Wylie, head of the Fox Cities Convention and Visitors Bureau.

That's changing.

A group of three investors is currently at work on a plan to convert the former Vulcan hydroelectric plant into a high-end restaurant and micro-brewery.

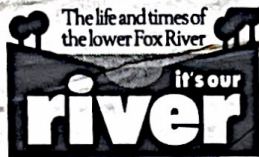
The old plant adjoins a new Heritage Park that will afford visitors a glimpse at some of the most stunning views the river has to offer: whitewater

that shoots geysers from old dam structures during high water periods, eagles in the winter, and blue and green herons during the times of year when the water level is low.

A restored trolley car, which began operating this summer, may eventually have up to 2,200 feet of track on which to thrill visitors with rides.

A master plan for the riverfront is in the offing, adding further to the storehouse of ideas for ways to enhance the city's landmark feature.

■ For further information, contact the Appleton Public Library, 225 N. Oneida St., Appleton, at 832-6173.



## TAMING THE FOX RIVER

# Effort to transform rugged river into navigable waterway met with challenges

By Doug Erickson  
Post-Crescent staff writer



Of the many people whose foresight and persistence led to the Fox River locks system, Morgan L. Martin often gets credit for having the political muscle to make it happen.

The Green Bay man was a delegate in Congress for the Wisconsin Territory in 1846 when he successfully introduced a bill granting federal land for the upgrade of the Fox River waterway.

Two years later, when Wisconsin became a state, the pieces were in place to continue the difficult, sometimes heartbreaking, effort to transform a rugged river into a navigable waterway.

"This was really Wisconsin's first public works project," said Harlan Kiesow, executive director of the East Central Wisconsin Regional Planning Commission in Menasha.

The challenge was daunting. In the 39 miles of the lower Fox River from Lake Winnebago to Lake Michigan's edge at Green Bay, the drop is more than 170 feet, almost as great of a plunge as that at Niagara Falls.

## "This was really Wisconsin's first public works project."

HARLAN KIESOW, executive director of the East Central Wisconsin Regional Planning Commission in Menasha

When French explorers Jacques Marquette and Louis Joliet traveled the state's heartland in 1673, they wrote of the sharp rocks that cut the feet of the people lugging canoes around the major rapids of the Fox River.

Later, near the now-historic Charles A. Grignon Mansion in Kaukauna, men used to manually take boats out of the water and charge a fee to carry them around the rapids, said John Forster, chairman of the Fox River Management Commission.

"In some cases, they actually had to dismantle the boats and reassemble them on the other side," he said.

If the Fox River was ever to become a major waterway as many hoped, it would need to be transformed.

"Essentially, they were looking at commercial transportation," said Kiesow. "There weren't any highways or railroads at the time. Water routes

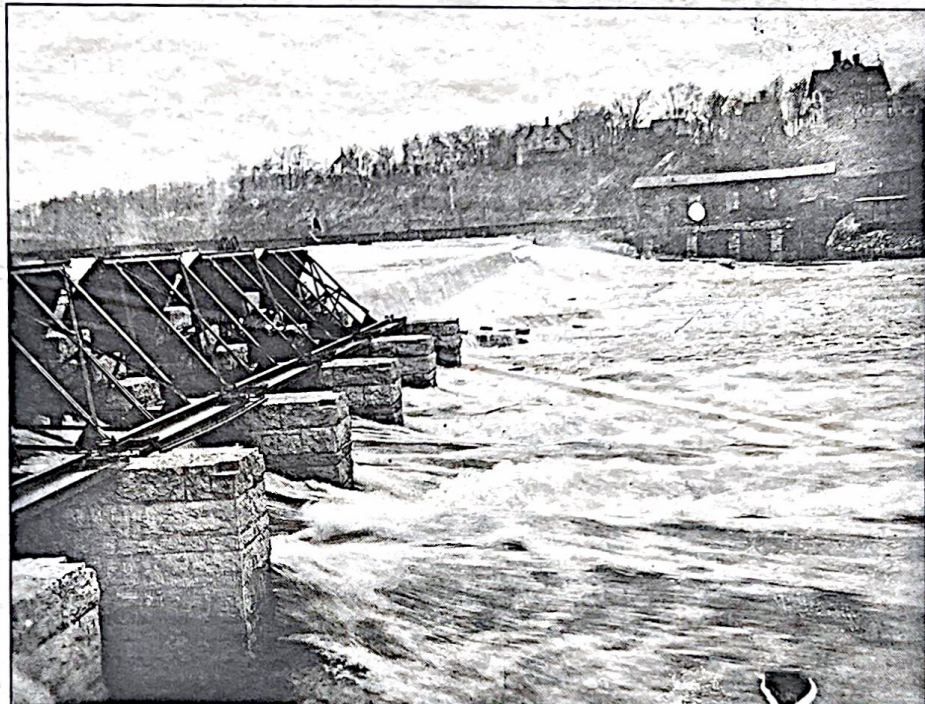


Photo courtesy of Outagamie Historical Society

IN THIS HISTORIC photograph, water rushes over a dam on the Fox River in Appleton.

## TAMING THE FOX RIVER

# Some Fox locks facts and figures

By Doug Erickson  
Post-Crescent staff writer

Think of a lock as a giant bathtub, designed to get boats around the rugged water of the Fox River.

To build one, workers first dug a canal off to the side of the rapids. Boats traveling up river take the canal path and enter one end of the lock.

A lock tender closes the large miter doors, or gates, behind it, then opens valves on the doors at the other end of the lock to let water in and fill the "bathtub."

Usually the difference in water level from one end of the lock to the other is seven or eight feet.

About 250,000 gallons of water enter the lock chamber. When all the equipment is in top form, the chamber takes about four minutes to fill. Because the gates at the De Pere Lock leak, the

process takes about twice the time now at that site.

When the chamber is filled to the same level as the pool level on the upstream side, the boat exits the other end. The lock is now ready for any boat moving downstream. The process simply reverses.

The locks are about 146 feet long by 36 feet wide. Numerous recreational boats - at least 24 - can fit in a lock chamber at one time, reducing the work of the lock tenders.

Craft less than 26 feet in length are charged \$5 per lock. Longer craft are charged \$10. An unlimited seasonal permit costs \$100.

This year, from May 15 through Oct. 4, the Menasha and De Pere locks are open 10 a.m. to 10 p.m. Mondays through Thursdays and 8 a.m. to midnight Fridays through Sundays and holidays. The Little Kaukauna Lock is open 10 a.m. to 10 p.m. Thursdays through Mondays. It is closed Tuesdays and Wednesdays.

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## Locks: State's 'first public works project'

were really the primary mode of transportation. What they really envisioned was transportation between the Great Lakes and the Mississippi River."

That would have allowed an intracontinental route from Green Bay to the Gulf of Mexico. To achieve that, a milelong canal connecting the upper Fox and Wisconsin rivers at Portage was constructed. The upper Fox River originates in Columbia County and flows about 107 miles in a northeasterly direction into Lake Winnebago.

The 700,000 acres of land from the federal grant were to be used for the construction of dams, canals and locks, and the proceeds from the sale of some of the acres were to be used to fund improvements.

The state undertook the project at first, and by 1853, the Neenah dam was completed, as well as dams and locks at De Pere and Menasha.

In most cases, the building of dams and locks went hand in hand.

"Without the dams, you don't create the different water levels needed," said Forster. "The dams take the river and divide it into segments so you can have locks. On one side of the river, you have a dam. On the other side, you have a canal with locks."

Canal building was an arduous job, and much of it fell to Dutch and Irish settlers who were attracted to the area because of the promise of jobs.

"Workers earned their wages as they stood knee-deep in mud for hours, removing the mud by hand," writes William Hortsch in a chapter of the book, "A Tale of Twin Cities: The Development of the Fox River Waterway." "Days were long and pay short for the back-breaking work. Most diggers were allotted a specified amount of liquor at intervals during the day to ward off ague."

By 1853, the state was running short on funds for the project, with Gov. Leonard J. Farwell saying it "seems necessary to arrest this work to protect the state from public debt." The Legislature surrendered the project and turned over the lands to the newly incorporated Fox and Wisconsin Improvement Company, which agreed to complete the waterway in three years, according to historian George Nau Burrigge.

The private company marked the return of Martin to a central role. As early as 1829 he had convened a public meeting in Green Bay encouraging the improvement of the route. Now, as leader of the Fox and Wisconsin Improvement Company, he was marshaling the resources of private investors, including himself, to get the job done.

The effort ended poorly, with the company forced to give up its holdings in 1866 following financial hard times. But there were successes along the way.

For instance, much hoopla surrounded the 1856 voyage of the Aquila, the first steamship to navigate the entire system from Portage to Green Bay.

A new company, the Green Bay and Mississippi Canal Company, took over the project in 1866, but its board of directors thought the federal government could best continue the project.

Kiesow speculates that private companies just

did not have the wherewithal to weather the financial ups and downs of the huge project, so they weren't able to hold out long enough to reap the payoff.

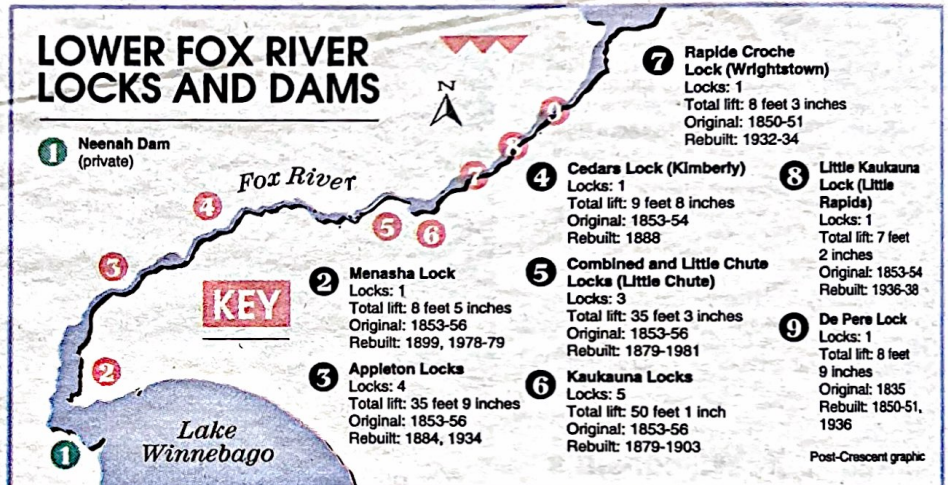
In 1872, the federal government took over the title to the locks and dams, and by 1884, the U.S. Army Corps of Engineers had completed the 17 locks on the lower Fox River.

For many years, the system operated as planned, with steamships traveling from the Great Lakes to the Mississippi River. But the country had changed greatly by the end of the 19th century, with railroads offering faster, 12-month cargo ser-

Local supporters rallied, and a Fox River Locks Task Force was created. In 1985, the Fox River Management Commission was created and operated the 17 locks on a lease basis from the corps, which had put the system in a "caretaker" status.

An important aspect of those first years when the management commission ran the locks was the use of minimum-security prisoners from the Sanger B. Powers Correctional Center in Oneida and the Winnebago Correctional Center in Oshkosh as lock tenders.

"It was cheaper because we could pay them minimum wage, and there was always a surplus of



vice and the age of the highway dawning.

"About the time they finished the locks and dams, Henry Ford had a better idea," said Bruce Johnson, executive director of Fox-Wolf Basin 2000.

The Fox River never became a major thoroughfare, although it handled tons of freight - grains, lumber, stone, coal. And as the area's first highway, the river left an indelible mark through passenger steamboat service.

"That's how many of the river communities sprung up," said Kiesow. "These were the stop-off points for the steamboats."

The failure of the route to become a regional commercial thoroughfare had more to do with the geology of the Wisconsin River than the Fox River, said Ross Plainse of Appleton, a retired project engineer with the corps.

"They found out the Wisconsin has a lot of shifting sands in it, making it difficult to keep a navigational stream open," he said. "It wasn't feasible financially."

By the late 1950s, barge traffic on the Fox had ended. But as early as 1921, the corps had begun questioning the need for keeping the locks open.

The corps closed navigation on the upper Fox River in 1951 and announced plans in 1982 to close the locks on the lower Fox River.

labor," said Plainse, who was in charge of hiring lock tenders at the time.

The use of prisoners rallied statewide support for keeping the locks open because people saw the value in helping soon-to-be-released inmates establish work records through community service, said Forster.

In the fall of 1987, the Rapide Croche Lock near Wrightstown was sealed to prevent predatory sea lampreys from migrating into the river and destroying the Lake Winnebago and Fox River fisheries. That spawned a domino effect that closed all but three locks the next year.

It made little sense to keep the locks between Appleton and Kaukauna open because they were used primarily as throughways to get from Lake Winnebago to Green Bay, not for destinations in between, Forster said. Some of them also had reached a state of disrepair that made their continued operation problematic.

The three locks that remain open today still provide a great deal of access to the river. At the south end of the lower Fox River, the Menasha Lock allows recreational boaters to get from the Appleton Yacht Club to Lake Winnebago and back. The two northernmost locks at De Pere and Little Rapids allow a stretch of about 18 miles of river to be freely boated from Wrightstown to Green Bay.

# 'Appleton's Edison' used Fox River's powerful fall to help generate history

By Judy Williams  
Post-Crescent staff writer

**I**t was a lot brighter than anything I'd ever seen at night," recalled 92-year-old Edna Belling. Belling was there that Saturday night of Sept. 30, 1882, when history was made as electricity arrived in Appleton, the same night she heard another onlooker say that the house looked "as bright as day." Her remarks are recorded in "History Today," a publication of the Outagamie County Historical Society.

Then 13 years old, Belling had been one of a crowd of spectators gathered at dusk in front of Hearthstone, a new mansion built high on a bluff above the Fox River on the corner of Second and Cherry streets. That night, it became the first electrically lit home in the city and the first hydroelectrically lit home in the country.

That this city, far from the more populated industrialized centers of the eastern United States, could pull off such a stunt is attributed to the foresight of local entrepreneur Henry J. Rogers.

"Others had not heard of electricity or were afraid of it," said Bev Harrington, executive director of Hearthstone. But Rogers, who had come to Appleton from Wyoming and Colorado, the wild, wild West, had an adventuresome spirit.

The Fox River, with its powerful fall of 38 feet within the City of Appleton, inspired Rogers to rely on the river for the power needed to generate electricity.

Besides his home, Rogers also wired the Appleton Paper and Pulp mill, which he managed, and the Vulcan paper mill. All three buildings were connected to a central electrical plant powered by the Fox River.

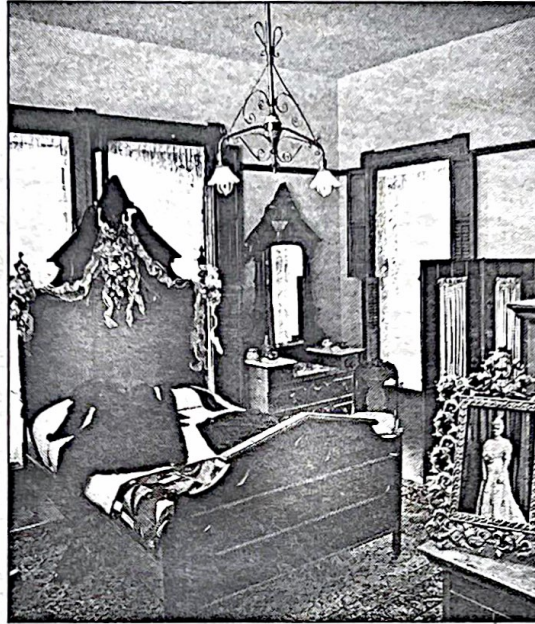
"There was only one other person who tried to get more than one building lit at one time, and that was (Thomas) Edison," said Harrington.

A man involved in many enterprises, Rogers became convinced of electricity's potential while he was on a bass fishing outing with H.E. Jacobs, a representative of the Western Edison Light Co. of Chicago, who was organizing companies in the Midwest.

President of the Appleton Gas Company at the time, Rogers returned to Appleton and convinced three other prominent community leaders, bank president A.L. Smith, H.D. Smith and Charles Beveridge, to invest in the "experiment."

Hydroelectricity was used first to produce light, then power and heat, making possible the ensuing industrial progress and improvements in daily living in the Fox River Valley.

Some reports say that Rogers' system could have been in operation before Edison's own centralized electrical station on Pearl Street in New York City.



**"There was only one person (other than local entrepreneur Henry J. Rogers) who tried to get more than one building lit at one time and that was (Thomas) Edison."**

BEV HARRINGTON,  
executive director of Hearthstone

**MRS. CREMORA ROGERS'**  
room at the Hearthstone Historical Home and Museum has been renovated, with updated woodwork and a return to the original Victorian colors.

The story, although undocumented, is that Thomas Edison heard that Rogers was going to be lighting more than one building at a time.

"You can imagine what he thought when he heard that Rogers was going to do it before him," said Harrington. "The story goes that he wired and asked Rogers not to get his going before he, Edison, could."

Rogers complied, the story continues. Thus, Hearthstone, Appleton Paper and Pulp mill and the Vulcan mill comprised the second group in the country to be lit from a central station.

But the lighting in Appleton still made history because it was the first occasion of electricity being supplied successfully from a centralized hydroelectric station using the Edison system. Only one other functioning hydroelectric plant existed in the world at the time, and it was in London.

Two wire 160-volt Edison K type dynamos, or generators, were installed in a small wooden shed located between Appleton Paper and Pulp's two paper mills. Each dynamo could produce electricity rated at about 12.5 kilowatts.

Although *The Appleton Post* reported that "the lamps produced a beautiful soft white light absolutely steady and constant," the first generator ran irregularly, causing lights to alternately brighten and dim.

Early electric service was very unreliable. With no voltage regulators, fuse protectors or meters, operators gauged brightness by eye and high volt-

age caused bulbs to burn out quickly.

There was no lightning protection and the uninsulated wires had a tendency to short out at the slightest disturbance, turning off the lights and shutting down the plants.

With no metering system, customers were charged by the lightbulb, or lamp as they were called. Dusk-to-dawn service cost \$2 a month for each lamp. Early bulbs were rated at 50 watts but produced wattage similar to modern 7-10 watt bulbs.

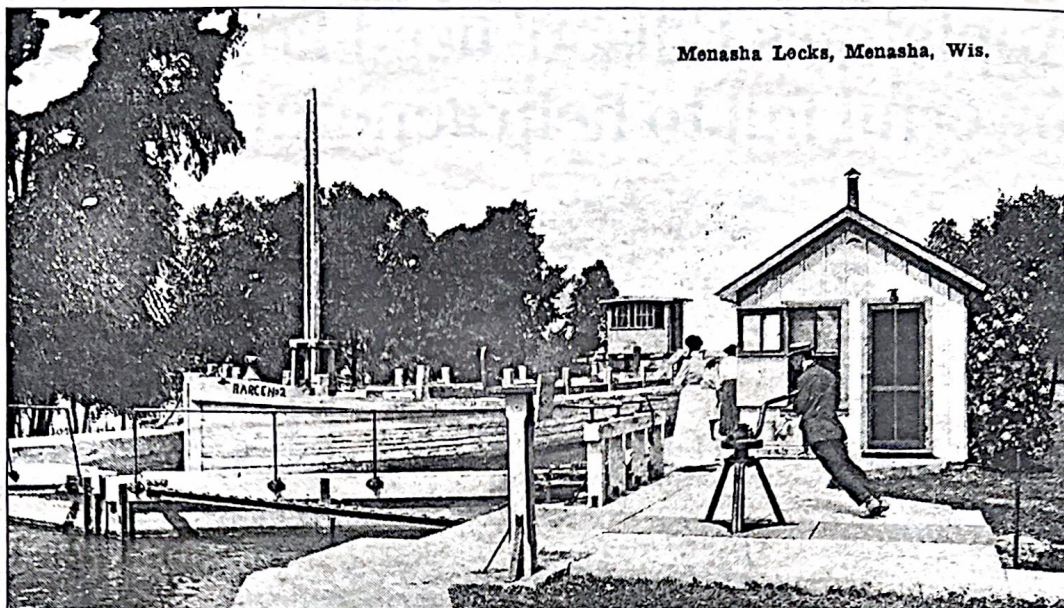
Hearthstone has seen a succession of homeowners. On Dec. 29, 1986, it was purchased by the Friends of Hearthstone, an organization dedicated to restoring the building to historical accuracy.

Friends of Hearthstone began offering public tours in July 1988, which continue to this day. The house still contains the wiring, cleats, switches and electrical fixtures installed in 1882, all in operative condition.

A replica of the Vulcan Street hydroelectric central station — Appleton's and the nation's second hydroelectric station — now stands on the south side of the Fox River off the end of the Lawe Street bridge.

A historical marker at the site explains that the Vulcan Street Plant "had a direct current generator capable of lighting 250 sixteen-candle power lamps, each equivalent to 50 watts. The generator operated at 110 volts and was driven through gears and belts by a waterwheel operating under a 10-foot fall of water."

## TENDING THE LOCKS



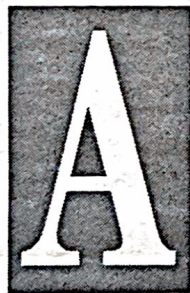
Menasha Locks, Menasha, Wis.

Photo courtesy of Menasha Public Library

**THIS UNDATED** photograph shows a boat "locking" through the Menasha lock. More than 100 years later, little has changed as the locks are still operated by hand. It's often a solitary job for Valley lock masters.

# More than a century later, it's still muscle power that guides the locks

By Doug Erickson  
Post-Crescent staff writer



At the end of a potholed gravel road, just past a vacant pulp mill, Mark Hammen mans one of the few remaining outposts of the state's frontier past.

As boaters cruise between De Pere and Wrightstown, he ushers them through a seven-foot drop in the Fox River, using equipment largely untouched by nearly 150 years of technological advances.

It's often a solitary job, lock tending. On slow days, like Mondays and Thursdays, hours can go by with only a boat or two and little human contact.

"I'd be lying if I said I never got lonely," said Hammen, 44, of Forest Junction. "It's not the easiest thing to deal with."

But there are perks. The Little Kaukauna Lock in Little Rapids, one of three still operational on the lower Fox River, offers a stunning view of rippling water and little-touched habitat.

**"I'd be lying if I said I never get lonely. It's not the easiest thing to deal with."**

MARK HAMMEN, lock tender

"People are impressed when they see this lock," said Hammen, who is in his eighth season of lock tending. "I think it's the most beautiful one on the river."

Eight full-time and four part-time employees staff the locks in Menasha, De Pere and Little Rapids. Members of this summer's staff are male, but there have been women in the past. A few are college students on summer break, but many are middle-aged or older. One's a retired Menasha firefighter.

Their work runs this year from May 15 to Oct. 4. As limited-term employees of the state Department of Natural Resources, they are laid off each fall, so many of them have other work to fall back on. Hammen owns an apple orchard. Others paint houses, do odd jobs or collect unemployment.

"It's actually hard to get enough people to do this because it's seasonal," said Dennis Arnold-

ussen of Appleton, who started as a summer lock tender in 1984 and now manages the system for the Fox River Management Commission. He is hired on a six-month contract basis by the commission and paid by the state.

The knowledge needed to operate the locks can be quickly taught as long as the candidate is mechanically minded and not easily overwhelmed, Arnoldussen said.

"A lot of people are intimidated by the locks when they see all that water," he said. "And you have to be physically fit. If you're not in shape when you start, you will be when you're done."

That's because the locks are still powered only by the muscle of the lock tenders, just as they were when built in the 1850s. It is the only hand-operated lock system in the United States to remain operational since its construction, said John Forster, chairman of the Fox River Management Commission.

Lock gates are opened by pushing a turn-wheel in a circle for 144 steps. Water is let into and out of the lock chamber by opening small valves in the lock gates, either by yanking a crank wheel or by pulling on levers.

While stone and timber have been replaced with concrete and steel on the bodies of the three oper-

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## FUTURE OF THE LOCKS

# Supporters of reopening Fox locks remain optimistic with tentative deal

By Doug Erickson  
Post-Crescent staff writer



fter more than a decade of up-and-down efforts to reopen the lower Fox River locks to boat traffic, supporters say a workable plan may finally be in place.

"I really think everyone involved, including the public, sees the benefit this system could offer," said John Forster, chairman of the Fox River Management Commission, which operates the three of 17 locks

still open.

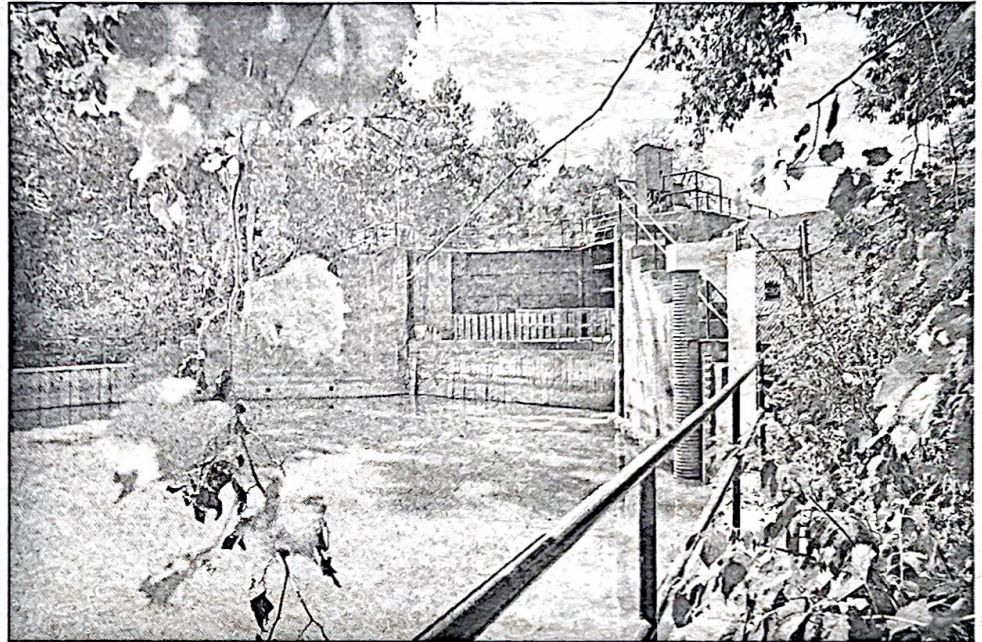
"We're as close now as we've ever been," said Harlan Kiesow, executive director of the East Central Wisconsin Regional Planning Commission. "Unless something significant happens now from a political standpoint, I think we'll get some type of agreement."

The reason for the optimism is a tentative deal worked out between the state and the U.S. Army Corps of Engineers, which has owned and operated the locks since 1872.

Under the plan, the state would take over ownership of the locks and share the operating costs with local municipalities.

The federal government, which has long wanted

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Post-Crescent photo by Mike

**THE RAPIDE CROCHE LOCK**, located just west of Wrightstown, was closed and sealed in the fall of 1987 to help prevent sea lamprey from infiltrating the

Fox River and Lake Winnebago, but may rec soon complete with a barrier dam surrounding keep the lamprey out.

CONTINUED FROM PAGE 18

## Tender: Muscle power still guides the locks

ational locks, many of the gears and valves are original.

There is a certain amount of pride among the lock tenders that their work is still physical and hasn't been overtaken by computers.

"The video whiz kids coming out of college wouldn't know what to do if they couldn't push a button," said Chuck Schmidt of Appleton, a lock tender at De Pere.

A mechanized system might be faster, "but if you're in a boat, why are you in a hurry anyway?" asks Dale Collier, 66, of Menasha, who has been a lock tender on and off for 24 years.

On weekends, 100 or so leisure boats might pass through a lock on a Saturday. The work is non-stop, with lock tenders changing water four or five times an hour.

"It's hard work on the weekends, which I suppose makes up for the guilt of not doing much some of the other days," said Hammen.

On slow days, lock tenders read or do small maintenance projects. Hammen grows peppers and green beans around the tiny shed that's his office.

Lock tenders have their stories - of people falling overboard, of tipsy women flashing some skin, of boaters giving them soda and cookies on the way by.

"A lot of boaters like to sing in the locks because of the acoustics," said Hammen. "Or they make animal sounds. I used to think that was strange, but now it doesn't faze me."

When Arnoldussen hires a new lock tender, he gives them this advice: Never jump into the water.

Of course, it's well-known that Arnoldussen twice did just that to retrieve people.

In the most dramatic incident, the drowning man was going under for the third and probably last time when Arnoldussen jumped in and saved him. The U.S. Army Corps of Engineers gave Arnoldussen the Commander's Award for Civilian Service.

Lock tenders don't get rich - starting pay is \$7.50 an hour - but here are other compensations.

"It's really pleasurable. You're outside, it's summer, there's no one looking over your shoulder," said T.A. Bowlby, 62, of Green Bay, a 12-year veteran.

"This is the only job I've ever had that I didn't mind getting up for in the morning," said Richard Alby, 58, of Kaukauna.

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## LOCK TALK

**"You'd think there'd be more interest in the locks right now. People don't see the benefit, they only see the first dollar they're going to lose."**

JOHN WALD of Combined Locks, a retired corps employee

**"This river made the Fox Cities, and now people want to turn their backs on it."**

RICHARD ALBY, of Kaukauna, a lock tender at the Menasha Lock

# Deal: Supporters of reopening locks upbeat

to abandon the locks and is moving in that direction, has offered to pay the state \$14.8 million for the transfer. A majority of that would be money the corps would have to spend anyway to safely close and fill in the locks.

It is expected to cost more than \$20 million to renovate the locks and to create a 25-year endowment to run them. Consequently, state and local supporters must come up with about \$5.3 million over seven years to add to the \$14.8 million in federal money.

The state has said it will fund half of that. Local leaders now are discussing how to pay for their \$2.65 million, which works out to about \$375,000 a year for seven years.

All possible sources of revenue - industry, tourism, boaters, non-profit "friends of the river" groups - are being considered so that taxpayers don't shoulder the entire burden.

Supporters hope a final agreement between the corps and the state can be signed before the end of the year.

In the past, the "rich-boater issue" has been a stumbling block to rallying support for the locks. That's the belief that only the well-to-do will benefit from a reopened waterway.

"I think it's still an issue for some people, but we've overcome it to a large degree," Kiesow said.

Supporters tout what is called the heritage parkway plan. If the transfer of ownership goes through, the state would acquire about 95 acres of

property around the 17 lock stations, Kiesow said.

That property, which includes about 10 miles of water frontage, could be developed for public access and used for such things as trails, fishing sites, canoe launch facilities and maybe even campsites, Kiesow said.

The nine now-boarded houses that once were the residences of lock tenders could be used for information or welcome centers, or they could be leased for private ventures, such as bed-and-breakfast inns, he said.

The recreational benefits would increase tourism, attracting additional private investment in river-related amenities, supporters say.

"Let the Yuppies come down on canoes and camp here," said T.A. Bowlby, a lock tender at De Pere.

For those like Bowlby who work on the river, or once did, the issue is a no-brainer, and they often are frustrated that local residents aren't more enthusiastic about maintaining the lock system.

"You'd think there'd be more interest in the locks right now," said John Wald of Combined Locks, a retired corps employee. "People don't see the benefit, they only see the first dollar they're going to lose."

"This river made the Fox Cities, and now people want to turn their backs on it," said Richard Alby of Kaukauna, a lock tender at the Menasha lock.

About 7,100 boats go through the three still-operational locks each summer, carrying about

28,000 passengers. The Menasha lock is the busiest, followed by De Pere and Little Kaukauna.

Under the all-or-nothing plan being considered now, the entire river would be reopened between Lake Winnebago and Green Bay.

That means an innovative solution must be brainstormed for the Rapide Croche lock, which was sealed in the fall of 1987 to prevent sea lamprey from invading the Fox River and Lake Winnebago fisheries.

Perhaps a small hydraulic lift could pick up boats smaller than 18 feet, swivel them around the lock, and drop them on the other side, Kiesow said. A travel lift like those used at some marinas could take barge and large commercial traffic around the area.

Supporters got a boost earlier this year when U.S. Rep. Jay Johnson, D-Green Bay, secured \$1 million in federal money for 1999 to repair pressing maintenance problems, such as the leak in the De Pere lock.

"The federal government wouldn't want to put additional money into the locks if it didn't look promising," said Forster.

Still, no one is saying the lock transfer is a done deal, and supporters know that strong opposition could surface at any time.

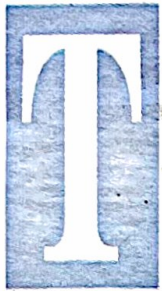
"Some weird thing could happen," said Kiesow. "It's happened in the past."

"It's going to be a fight," predicts Wald. "It's going to be one hell of a fight."

## TENDING TO THE DAM

# Dam tender Wimberger and his wife take up house at the most unique location

By Doug Erickson  
Post-Crescent staff writer



Three-quarters of the way up a bedroom wall in Joe Wimberger's house, an alarm clock-sized unit embedded in the plaster emits an ominous red glow 24 hours a day.

From his bed, he can watch the digital numbers creep up or down. When the fluctuation is particularly large, an alarm behind the clothes dryer in his utility closet goes off.

For six years now, Wimberger and his wife, Barb, have made their home on a concrete peninsula in the middle of the Fox River in Appleton, where he is dam tender for the Appleton Middle Dam.

The dam, which runs alongside the Olde Oneida Street Bridge near the Fox River Mills Apartments, is the only one of 13 dams on the lower Fox River to have a dam tender living on-site.

"I'm probably one of the few people in the country living on a dam," said Wimberger, 57.

The gauge in his bedroom records the depth of the small reservoir behind the dam. It needs to be 721.6 feet above sea level. If it fluctuates more than two inches on either side, the alarm sounds.

Then Wimberger goes to work, raising or lowering one or more of the 15 tainter gates on the dam with a winch mounted on a movable tram.

He takes his direction from the U.S. Army Corps of Engineers, which controls the depth of Lake Winnebago through a federal dam at Menasha and a privately owned one at Neenah. The Appleton Middle Dam is owned by the Fox River Paper Co., which also owns the house and employs Wimberger.

Both the dam and house were built in 1927, said Dave Kamps, dam supervisor for Fox River Paper Co. The company uses the dam to generate about one-third of the energy requirements for the paper mill.

As tender of the fourth dam downstream from the Lake Winnebago, Wimberger describes the process this way: "The lake is a big swimming pool. The corps has two dams to control the level of the lake. They want to keep it at a certain level. Whatever they do eventually comes down here."

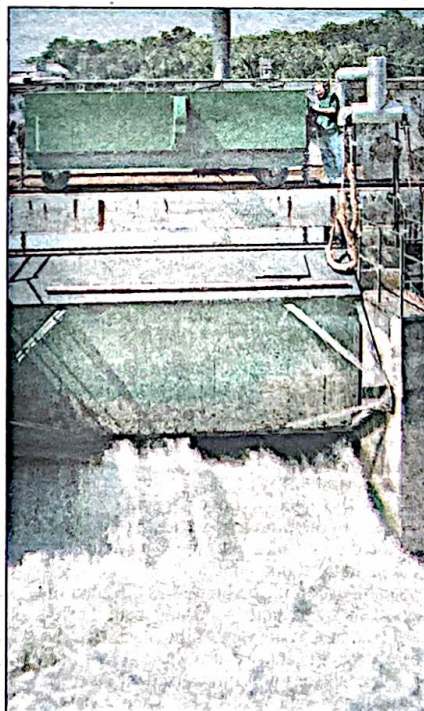
A dam tender is needed on-site because, unlike most dams, this one doesn't have a spillway for overflow, Kamps said. That, coupled with the tiny size of the reservoir, means any fluctuation in water level is immediately felt, Wimberger said.

"Whatever the corps does in hours, we have to do in minutes."

Wimberger had worked in the paper industry all his life and had experience with tending locks on the Fox River when he saw the classified ad for a dam tender.



Post-Crescent photos by Kristyna Wentz-Graff



**JOE WIMBERGER**, dam tender for the Appleton Middle Dam, stands near a workbench decorated with some of the handicrafts that adorn his home on a concrete peninsula in the Fox River. Wimberger has lived in the unique dwelling with his wife, Barb, for six years.

"It's such a weird category. I think only three or four people applied," he said. "I knew it wouldn't be much work - sort of a cushy job."

Kamps said the company was lucky to find someone with both knowledge of the river and paper mill experience.

Wimberger and his wife were renting at the time, so it wasn't a problem to move to the house, which comes free as part of Wimberger's salary.

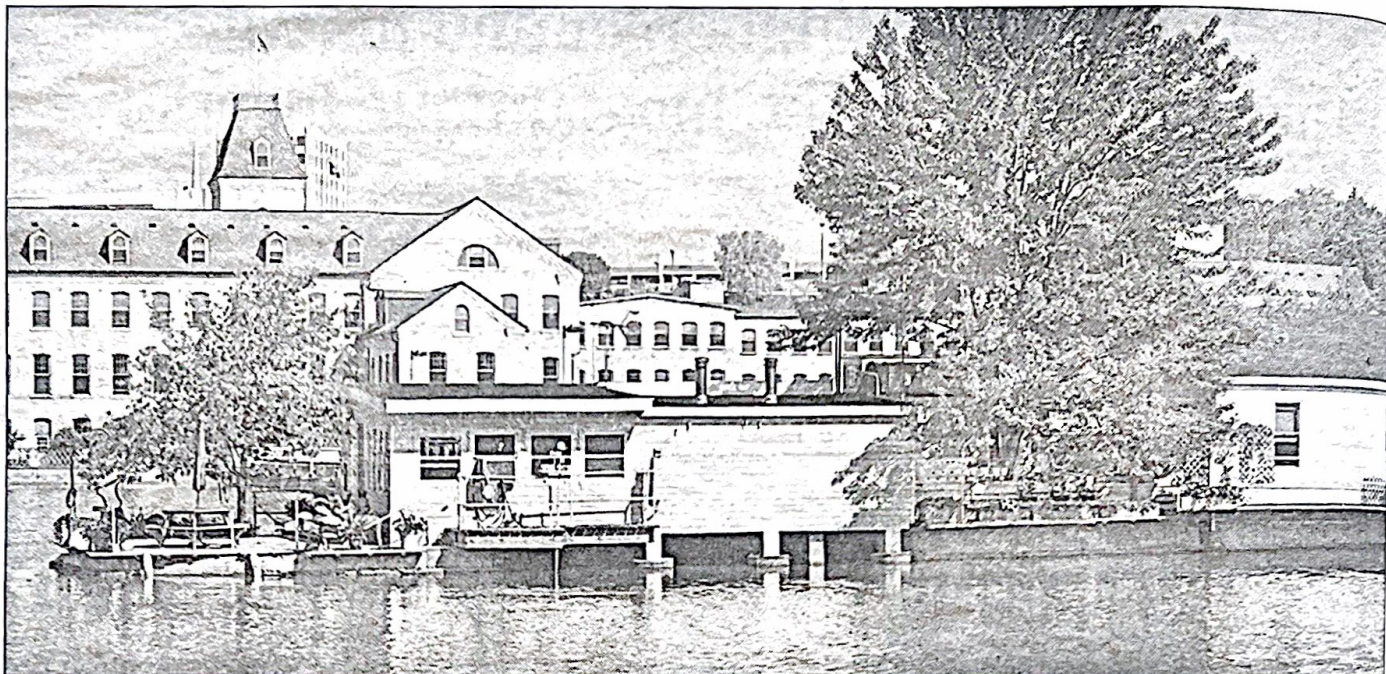
It's a small house - there's just one bedroom - and it wasn't in great condition when the Wimbergers moved in. The couple has transformed the site into something of a wonderland - renovating the house, adding on, and bedecking the whole area with antiques, unusual artifacts, and home-made sculptures.

The air-conditioned office Wimberger built includes a stereo system, Nordic Track and Health Rider machines, and a cat, Hosea.

"He has one of the best offices in the company," Kamps said.

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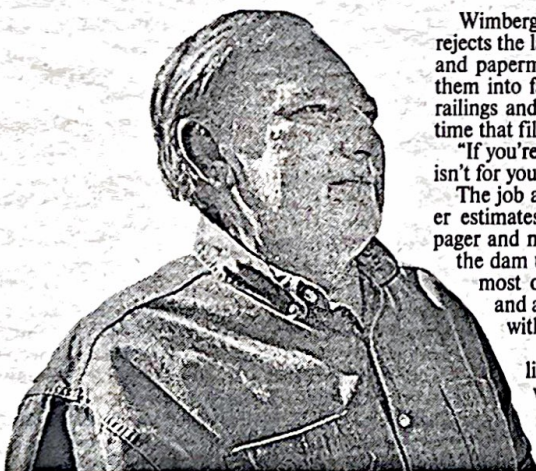
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Post-Crescent photos by Kristyna Westcott

**JOE AND BARB WIMBERGER** have turned the one-bedroom home on the dam into a festive dwelling, a popular attraction for motorists.

## Tender: Wimberger in unique situation



**THE UNUSUAL** location of their home has given Joe Wimberger an assortment of good and bad sights over the past six years.

Wimberger also could be called an artist, though he rejects the label. He takes parts of old farm machinery and papermaking equipment, paints them, and turns them into fanciful animals and plants that adorn the railings and the windbreak along the dam. It's a pastime that fills in the down time.

"If you're not a person who tinkers around, this job isn't for you," he said.

The job averages about 20 hours a week, Wimberger estimates. It really isn't that cushy. He carries a pager and must always be within 10 or 15 minutes of the dam unless he has scheduled time off. He does most of the light maintenance around the dam and assists his co-workers at the paper company with other tasks.

When the job is rough, it's really rough, like during thunderstorms and blizzards, when the weather wreaks havoc on water levels.

"And it usually happens in the middle of the night," Wimberger said.

In the winter, he sometimes must balance below the dam's walkway to break away ice that can stop the gates from operating.

The unusual location of the house has afforded the Wimbergers with sights both good and bad. There's the water, of course, and the view of the Skyline Bridge off their back deck. But they've also witnessed or been nearby for three suicides and three accidental deaths, including the June incident this year when a pickup

truck crashed through an Olde Oneida Street bridge railing, killing the driver and a passenger.

"Those were things we just didn't expect," said Barb Wimberger.

But there is much to admire about this singular piece of real estate, and the Wimbergers say they're content.

Sitting on patio chairs on their back deck, they are oblivious to the urban landscape around them as the rush of water through the gates of the dam drowns out civilization.

"It's kind of like having a cottage in the North woods, except you're right in the middle of the city," said Barb Wimberger.

**"If you're not a person who tinkers around, this job isn't for you."**

**JOE WIMBERGER**, on his job as dam tender

## JESUITS ARRIVE IN THE VALLEY

# 'Black robes' like Marquette, Allouez inked first written history of Wisconsin

By Maija Penikis  
Post-Crescent staff writer

**T**hey were called "the black robes" by the Indians and they were responsible for the first written history of Wisconsin.

They were the Jesuits, articulate, educated men who were as much explorers, mapmakers and journalists as they were missionaries. It is from their writings that much of the history of this area is known. People like Father Claude Allouez, who

arrived in Green Bay in 1669, established the first permanent settlement by white men in the Fox Valley.

Men like him, Marquette, Nicolet, Radisson, La Salle, and Joliet opened the door to the white people who were to settle the Fox Valley.

"Actually, there were probably many men, many missionaries who accompanied people like Allouez and Marquette, but those are the names that have come down through history," said Sister Ella Kaster, archivist for the Green Bay Diocese.

An interesting aspect of the story is that with the death of Allouez and the departure of Marquette, the mission field went fallow for many years.

"Most people probably don't realize that after the early Jesuits left, there were no missions and no white people in this area between 1729 and the 1760s. Later, the Grignon family came to Kaukauna," explained Kaster.

"But the presence of Catholicism didn't materialize until the 1830s, when Father Samuel Mazzuchelli, known as the 'frontiersman for the church,' arrived."

After that, one immigrant followed the other - from Belgium, from Italy, from Holland, from Ireland and Germany.

By then, there was little question that the idea was to bring in white people to populate the area but also to preach and convert the Indians who lived along the shores of the Fox River.

At about the same time, around the 1830-mid-1850s, there was a great influx of Yankees - settlers from New York and New England. Some came as farmers and homesteaders, entrepreneurs and land speculators, writes the Rev. John McFadden, senior pastor of First Congregational United Church of Christ, who is on sabbatical exploring the church history of the Fox Valley.

With them came preachers and teachers. One of the most colorful characters, McFadden found, was Eleazar Williams, known as "the Lost Dauphin," which, it turned out, he himself had "discovered."

"Williams was as colorful and complex a character as 19th century America produced. The son

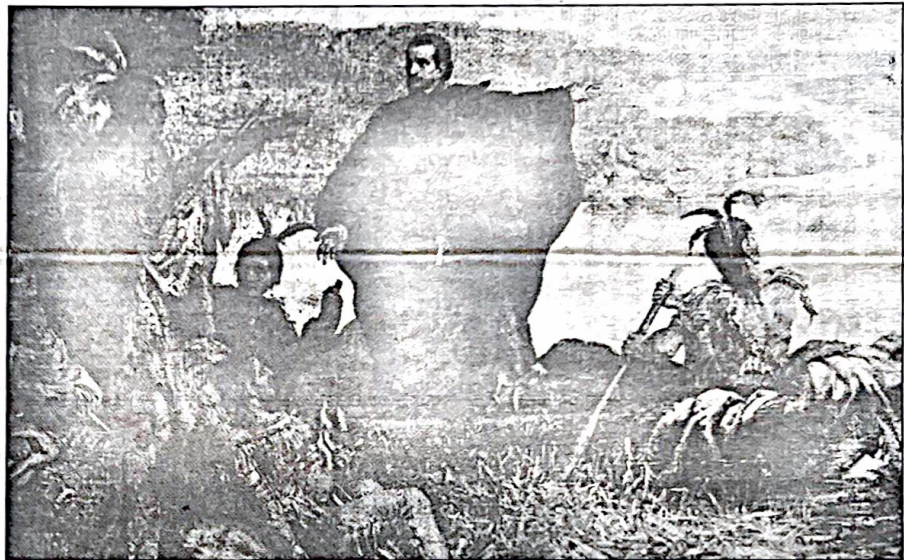


Photo courtesy Marquette University archives

**FATHER MARQUETTE**, pictured in this painting with Native Americans, may be the best known "black robe" in the history of Wisconsin, but historians say there were probably many men who accompanied the educated Jesuits like Marquette and Father Claude Allouez.



**"The presence of Catholicism didn't materialize until the 1830s, when Father Samuel Mazzuchelli (at left), known as the 'frontiersman for the church' arrived."**

**SISTER ELLA KASTER**, archivist for the Green Bay Diocese

of an American Indian and a European mother, raised by relatives in Massachusetts,

pursued a checkered career path as soldier, linguist, negotiator, missionary and con artist," he writes.

For a time he served the Episcopal Church as missionary among the tribes of New York state and ultimately convinced portions of the Oneida and Stockbridge tribes to relocate to eastern Wisconsin.

Generally, the arrival of the eastern ministers was not really a missionary enterprise but rather a service to the people who had come before them.

They brought what McFadden refers to as "Yankee religiosity, the Second Awakening and the Second Enlightenment. It was this form of Puritanism which dominated Yankee religious values in the 19th century, rooted in the traditions dating to the original Puritan colonies."

Their congregations were filled with the easterners who came to settle here as opposed to the Catholic immigrants who arrived from Ireland, Holland and Germany to escape poverty, religious persecution and find a better life in a new country.

Congregationalists, Presbyterians and Methodists led the way in this "enlightened cooperation, forming any number of pacts designed to prevent

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## Robes: Jesuits helped pen state's history

duplication or competition in their efforts to bring Christian values to the frontier.

The wish of the easterners was to be good Christians but they also wished to maintain the standards of culture and refinement they associated with the sophisticated Eastern cities they had left behind, McFadden wrote.

The Lutherans, too, arrived about the same time but they, too, showed little interest in proselytizing. Their congregations were made up of people who had come here as Lutheran immigrants from various parts of the country or other countries.

A brief history of the first missionaries - the Jesuits and those who followed - follows:

### Father Claude Allouez (1620-1689)

**F**ather Marquette's name may be the best known "black robe," but it was actually Allouez who first established missions throughout what was known as "the west" in the mid-1660s and became known as "the father of Wisconsin missions."

Allouez, born in France in 1620, came to the Green Bay area in 1669, but by then he had already been active in what was known as "the New France," namely Canada.

He was the first missionary to cover this territory, the first to offer mass on the shores of the Oconto River and in 1771, he established St. Francis Xavier in what is now De Pere.

Along the banks of the Fox River, near the bridge in De Pere, is a plaque marking where the mission probably existed. It flourished for about 20 years and in that time, it was visited by, among others, Father Jacques Marquette and Louis Joliet, who stopped off on their way to discovering the Mississippi River.

Actually, Allouez began his journey in the new world in 1665 when he joined his Jesuit brethren at Sault Ste. Marie. Eventually, accompanied by six Frenchmen and 400 Indians, he started on his journey from Three Rivers toward the west where, for the next 30 years, his name became legend.

Before leaving Wisconsin, Allouez founded four missions in the Fox River area, learning their languages and lore in order to be more effective.

Father Allouez died in 1689 in St. John's River in Indiana, but his name lives on. The village of Allouez in Brown County is named in his honor and his likeness represents one of the three "groups" of people in early northeastern Wisconsin (Indians, fur traders and missionaries), which stands in front of the Brown County Courthouse.

### Father Jacques Marquette (1637 -1675)

**T**he name Marquette is well known to most in Wisconsin but few know that in the hustling, bustling Chicago Loop there stands a monument dedicated to Marquette.

As incongruous as that sounds, it was actually on this spot that Marquette camped

and became ill. Knowing he was dying, the good priest wanted to be home with his faithful Indians, and set out to the mission fields which he considered home.

Around 330 years have passed since a 29-year-old Marquette arrived in the New World from his home in the ancestral fortress city of Lyon, France, to begin his ministry that left an indelible mark upon Wisconsin and much of the Midwest.

He seems to have possessed an aptitude for languages - It is recorded he mastered six dialects.

Marquette served a number of posts before he succeeded Allouez near the western shores of Lake Superior, where he began to hear tales from the Indians about the great river, Mississippi, which flowed into the sea to the south.

When Louis Joliet arrived with authorization from the governor of New France to lead an expedition to the Mississippi, Marquette gladly agreed. The purpose was to claim the great waterway and the land around it for France, convert the tribes along the way to Christianity and, hopefully, discover a passage to the "California sea."

It was during this voyage that Marquette and his explorers visited Allouez at the mission of St. Francis Xavier, now De Pere.

Much was written by both Marquette and Joliet about the wonders of their trip on the Mississippi, which, according to Marquette's journal, was stunning and met all expectations. History has its own ironies and this is certainly one of them. Though Marquette was the first to die (May 18, 1675) at the age of 38, his chronicles of the voyage of discovery of the Mississippi were to become the most famous, for Joliet lost his papers and maps when his canoe overturned.

### Father Samuel Mazzuchelli (1806-1844)

**T**he village consisted of a considerable number of houses scattered on both banks of the Fox River, where it emptied into that inlet of Lake Michigan, called, because of the color of its waters, Green Bay.

"At this time the people were numerous, approximately 1,000, almost all were of Canadian descent and married to the Indians. Left for many years without religious instruction, even though they had not abandoned their faith, they had at least forgotten all of its practices."

So wrote Fr. Samuel Mazzuchelli in 1831, a Dominican priest from Italy, the first priest officially assigned to what would become the Green Bay Diocese, many years after the Jesuit missionaries of the 1700s left.

As it turned out, Mazzuchelli was the man who brought back Catholicism to the Green Bay area, founding the oldest continuing Catholic church in the state - St. John, Green Bay. He would go on to build or form the nucleus of nearly 40 other parishes and five schools. He figured in the construction of a chapel at Grand Kakalin (Kaukauna) by the Menominees.

To teach American Indians about God, he compiled a Menominee liturgical almanac, which

when printed in 1834 in Green Bay, was the first item published in Wisconsin. His prayerbook in Winnebago, with one copy still in existence, soon followed.

He founded the Dominican Sisters of Sinsinawa, who, along with the Mazzuchelli Guild, are working to elevate him to sainthood. On July 6, 1993, he was declared venerable by Rome, which is one step away from beatification and eventual canonization.

### Father Theodore Van Den Broek (1783-1851)

**I**t has been written that "Little Chute is the true daughter of the Fox River, the heir of an Indian named Fish Eggs, the brain child of a devout Hollander named

Van Den Broek and a cousin of the rapids and waterfalls of the communities on the Fox."

The devout Dutch referred to in an article was Van Den Broek, who came to Little Chute in 1835 to establish a mission. But he did much more. His original church was an elm bark teepee made by the Indian women, six feet tall and 15 feet long.

That, however, was replaced by a frame building and eventually the beautiful St. John Nepomucene

Catholic Church, which is the second Catholic congregation in the Green Bay Diocese.

Van Den Broek, who had changed his affiliation from the Franciscans to the Dominican order, lost the majority of his original flock in 1843 when, by treaty, his Indians were moved first to Lake Poygan and then to their reservation in Keshena.

In 1847, Van Den Broek sailed back to Holland, primarily to collect his inheritance. He was to learn it was stolen but, now in Holland, the priest busied himself in a new enterprise: bringing back a new congregation with him.

The group of 350 sailed on three ships - the Maria Magdalena, the Libra and the Americ, to America with Van Den Broek and came to Little Chute. Many of the people there still carry the name of their forebears: Van Dyke, Vanden Heuvel, Ver-kampen, Verkuilen, Vierboort.

Van Den Broek died in 1851, and his remains are sealed in a copper box, entombed in a sepul-



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## THE EARLY EXPLORERS

# Certain he had found China, Nicolet settled for the mouth of the Fox

By Ed Berthiaume  
Post-Crescent features editor

**J**

ean Nicolet was on a mission, sent by the governor of New France to explore the uncharted territories known as The Northwest and buoyed by stories various Indians along his route had told him about the "strange people" who lived to the south.

The 36-year-old Frenchman and his party made their way across Lake Michigan, hugging the northern shore, before coming through what is now Upper Michigan and eventually finding a major waterway. Nicolet, prepared for just this occasion, had outfitted himself in a damask gown embroidered with colorful birds and flowers and

he carried a pistol in each hand, firing them into the air as a sign of celebration as he stepped ashore.

It was 1634 and Nicolet was sure he had found what he was looking for - China. Or at least the long-sought Northwest Passage that would connect the new territory with the Orient.

Not quite. He had found Green Bay and the mouth of the Fox River.

"No doubt Nicolet was bitterly disappointed that the reality of the scene did not live up to his hopes and expectations, that the People of the Sea were apparently those who lived on Lake Winnebago," writes Jo Bartels Alderson and Kate Alderson Rennert, a mother-daughter duo from Oshkosh who published a book, "Wisconsin's Early French Habitants," earlier this year. "Being a polite Frenchman, however, he removed his costume and sat down with the tribesmen in friendly council."

A sparsely worded report on the Fox River land-

ing, written by a priest, Barthelemy Vimont, at the time of Nicolet's death in 1642, reads:

*"They meet him; they escort him and carry all his baggage. He wore a grand robe of China damask, all strewn with flowers and birds of many colors. No sooner did they perceive him than the women and children fled, at the sight of a man who carried thunder in both hands - for thus they called the two pistols that he held. The news of his coming quickly spread to the places round about, and there assembled four or five thousand men. Each of the chief men made a feast for him, and at one of these banquets they served at least six score beavers."*

The white man had officially arrived on the Fox River.

Nicolet is widely held as the first white explorer to come upon the Fox River. There is speculation that some earlier explorers may have been on the Fox, but the documentation is so iffy and the

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## Robes: Jesuits helped pen state's history

cher which was built in tower of the present church.

### • Father Florimond J. Bonduel (1800-1861)

**B**onduel, who probably gave his name to the community, is one of the more interesting missionaries who came to this area.

Unlike many emigrant clergymen who came to the United States, the Belgium native seemed to have discovered the American Dream and was a man who not only saw this country's history in the making but made some of it himself.

He was instrumental in working with - and upsetting - the federal bureaucrats and Indian agents, which resulted in a cool reception in Rome by Pius IX in 1856. It began with the government's attempt to relocate the Menominee Indians at the mission of St. Francis Xavier on the reservation joining Lake Poygan and the Wolf River to another state.

Bonduel was present at the signing of the Treaty of Lake Poygan in 1848 when the Menominees ceded all their remaining land in Wisconsin to the government. But two years later, Bonduel went to Washington with the Indians to meet with President Millard Fillmore and two years later successfully lobbied for a resolution in the state Legislature that permitted the Menominee Nation to

remain here.

His extensive travels, which took him throughout the Midwest, included a short stint as rector of St. John the Evangelist Church in Green Bay and Holy Cross, Bay Settlement.

He died in Green Bay and is buried in Allouez Cemetery.

### Father Louis Dael (1822-1879)

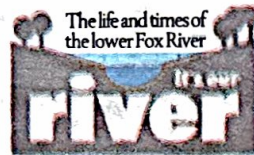
**D**ael, a Belgian, is less known in the Valley, possibly because he served so many parishes in the area. In fact, even the facts about his arrival in America are shrouded in mystery, though it is believed he was recruited sometime before 1850, when a bishop went to Europe.

The one thing that is certain is that during his years as pastor of St. Mary, Appleton, he was referred to as "Appleton's gifted orator" for his thunderous orations in support of the Union during the Civil War. So committed was he to the cause, he even "returned thanks to the numerous Protestants who were present at the speech and urged them to forget party and sect and serve the country." Quite the speech in a time non-ecumenism.

During his stay in Appleton he frequently took care of the Catholics in Neenah and Menasha and even Stephenville. But his principal mission was St. Edward, Mackville, where one of his three Christmas masses was always offered.

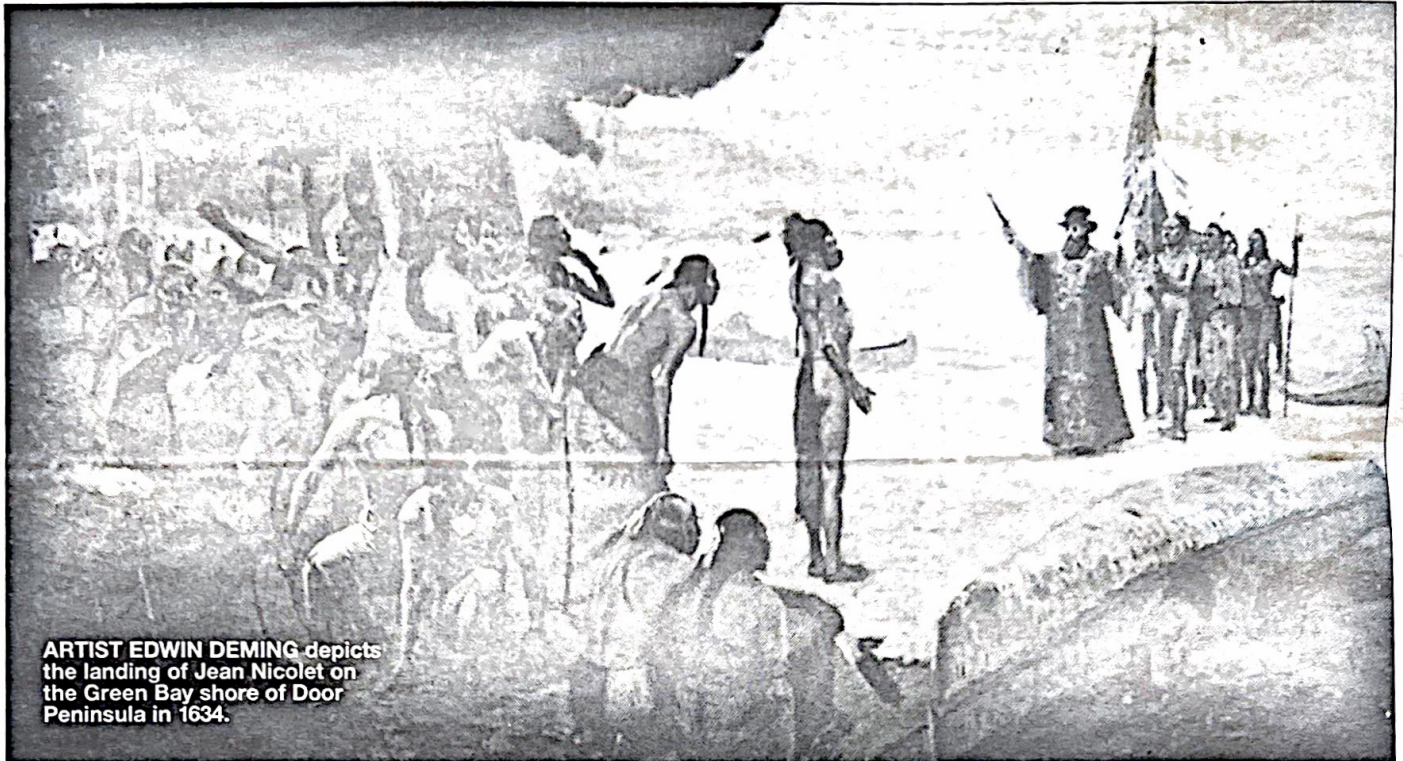


Father Louis Dael



• BIRTH •

CONTINUED FROM PAGE 25



ARTIST EDWIN DEMING depicts the landing of Jean Nicolet on the Green Bay shore of Door Peninsula in 1634.

Photo courtesy Exploring Wisconsin Waterways

## Explorers: Nicolet led the way to Valley

descriptions of waterways so vague that it's usually discounted by historians. Nicolet's journey through Wisconsin, which began in 1634 and ended when he decided to turn back not knowing he was three days away from discovering the Mississippi River (that honor would be accorded to Louis Joliet and Father Jacques Marquette 40 years later), is often credited with opening up Wisconsin and the Fox River region to exploration.

Other explorers would follow: Pierre Radisson, Medard Groseilliers, Cavalier de La Salle, Joliet and Marquette. Soon the missionaries would follow, including Father Claude Allouez as early as 1669.

Virginia Crane, a history professor at the University of Wisconsin-Oshkosh, says some of the writings and documentation from the early French explorers, Nicolet included, are a matter of debate. There are some historians, she said, who question whether Nicolet journeyed as far up the Fox River as he's purported to have gone. His descriptions of the waterway leaves room for debate.

"I'm not at all sure we can document Nicolet getting as far down as Lake Winnebago," she said.

"Until you get to Marquette and Joliet, things are a little controversial. That wasn't until the 1680s. The Fox River by then was pretty well known to a lot of other French explorers. So they describe the Menasha (Doty) island and Lake

**"I'm not at all sure we can document Nicolet going as far down as Lake Winnebago."**

VIRGINIA CRANE, a history professor at the University of Wisconsin-Oshkosh

Winnebago and turning into the upper Fox River.

"In my judgment, the earlier material is theory."

"The History of Wisconsin, Volume 1," part of a major Wisconsin history book series produced in the 1970s by the State Historical Society of Wisconsin, raises the same questions.

Alderson, though, begs to differ. She and her daughter spent nearly seven years researching their book, which was published in June. Alderson says there is sufficient information on Nicolet's journey to write without a doubt that he not only came upon Green Bay but then traversed through what is now Appleton and Menasha and to Lake Winnebago and beyond.

"There are people who try to make themselves important by debunking what's accepted," Alderson said of historians who raise questions about Nicolet and the other explorers in the first half of the 17th century.

Nicolet, she said, clearly describes "things you

can recognize, geographical features and people and such."

Nicolet had been sent on his journey by the then-governor of New France, Samuel de Champlain, himself an early explorer, who had made westward exploration a priority.

"Champlain, always anxious to promote the expansion of New France, must have been disappointed over the outcome of Nicolet's journey," Smith writes. "True, Nicolet had made new friends for the French, but he had found only more Indians, and the 'sea' upon which their country bordered was not the Pacific, not the Gulf of Mexico, and not the Gulf of California; nor was any route to the ocean opened up by the voyage."

Nicolet, upon his return to Quebec, would remain employed as an agent and interpreter between the French and the Indians he had befriended. But in 1642, while attempting to rescue an Indian prisoner, his canoe overturned in the St. Lawrence River. While a noted explorer who had traversed previously uncharted waterways and territories, Nicolet apparently did not know how to swim, and he drowned.

Alderson, who says she and her daughter wrote their book in part because the French aren't treated fairly in early American textbooks, says if Nicolet were alive today he'd have nothing to apologize for.

# Fox River Valley embodies a sense of history and tradition for immigrants

By Julie Gilkay  
Post-Crescent staff writer

**T**

he maple tree that embraced adventurous and curious children for generations still remains, its branches a little thinner, its trunk a little worn. But the memories it encompasses still thrive in Robert Armstrong's mind.

The memories are precious reminders of Armstrong's history, of his proud German ancestors who settled on the land by the south shore of the Fox River in

Appleton, now part of Telulah Park.

"It's good to have a sense of history, tradition and family," he said.

Edmond and Katherine Weimar, Armstrong's great-grandparents, moved to Appleton in 1878, buying and farming about 10 acres of land along the river. Edmond was only 8 when his family emigrated from Germany and settled in Germantown, Wis., before moving to Appleton.

As homesteaders, the Weimars grew raspberries, strawberries, potatoes and other vegetables and sold them to area stores, Armstrong said. There was heavy competition among the neighbors, who were mostly German, to see who could get to the stores and make the first sale, he said.

The Weimars had seven children, including Henrietta, Armstrong's grandmother. Henrietta and her husband, Andrew Grishaber, eventually took over the family farm and leased land from the Green Bay-Mississippi Canal Co. that was called Telulah Springs.

The Grishabers, along with their only child, Anna, Armstrong's mother, bottled the spring water and sold it around the city, using a horse and wagon and later a Ford truck to deliver it.

"When I was growing up, the spring wasn't free flowing, we had to pump it, but my mother remembered it free flowing," Armstrong said.

As a child, Armstrong, who was born in 1940, would help deliver water to people's doorsteps, picking up the used bottles and the money kept underneath them as payment.

What Armstrong remembers most about his childhood is the traffic on the river, including paddlewheelers, tugboats and houseboats. "When I was young, I remember the heavy river traffic of coal barges coming up the river" that stopped to make deliveries to the paper companies, he said.

And wildlife thrived. Lily pads, muskrat, kingfisher, carp, northern, eagles and hawks were a part of life on the river.

"It was a great place for a kid to grow up," he said. "Boy, was it fun."

Armstrong said his mother talked mostly about the recreational activities — sully races, picnics, baseball and the Telulah Club, neighbors who



THE GRISHABER family used horse-drawn wagons to distribute bottled Telulah Spring Water, which they sold around Appleton. Later, the wagons were replaced by a Ford truck for deliveries.

**"It was a great place for a kid to grow up. Boy, was it fun."**

ROBERT ARMSTRONG

formed a social group that got together for fun, playing cards and musical instruments.

Anna and her husband, Clarence Armstrong, kept all 10 acres intact until 1959, when they sold it to the City of Appleton for a baseball diamond. In the late 1960s, early '70s, they built a new house up the hill from the river and sold the rest of the property to the city. Armstrong's house on Weimar Court is all that remains of the original property.

Taxes for the 10-acre, riverfront property had become too much of a burden.

Anna debated plotting the land and selling it as riverfront property to interested buyers, but in the end she decided to sell it to the city for park use so more people could enjoy and share the river, said Armstrong's son, Steve.

"If she couldn't keep it in the family, the best thing she could do was make it into a park so others could use it," the elder Armstrong said.

After attending school in Michigan and marrying, Armstrong and his wife, Jeanice, moved off the riverfront property to another house in Appleton. But in 1986 he had a chance to move back "home" after his mother died and he inherited the house.

Although it was a tough decision, the Armstrongs decided to return to Weimar Court, leaving behind friends and neighbors. Armstrong said it was important to keep the tradition, especially since his grandmother had to go through some difficulty, buying all her siblings' shares over the years, to get the house.

Gentle reminders are part of Armstrong's everyday life.

The street signs he passes — Weimar Street and Weimar Court — are named after his ancestors who first settled on the land. The stone fountain from which the spring water bubbled now holds summer flowers in his yard.

And the Fox River embodies his home. The impressive kitchen window perfectly frames the picturesque river. It is a view he never tires of.

Armstrong hopes to keep the land rich in history and beauty in the family, and with three children and nine grandchildren, he doesn't think that will be a problem.

And the maple tree is ready. There still is some life in it.

## HARVESTING FOX RIVER ICE

# Fox River ice harvesting proved a major winter resource for the Valley

By Bill Knutson  
Post-Crescent managing editor

**W**hen talk turns to industry along the Fox River, few folks realize that for half a century, the ice that covered the river in the winter was a major resource.

Ice harvesting on the Fox River and Lake Winnebago provided jobs for the hundreds of men who kept iceboxes filled in area homes and businesses.

While the cutting of ice for home use dates back to the earliest settlements along the Fox River, large-scale harvesting for home and commercial use began in the late 1870s and early 1880s.

There were several early ice operations in the area, each with rambling wooden ice houses along or near the Fox River. There was Weimar's at Telulah Springs, Murray's on Lake Road and Lehmann and Blackwood.

But it was the Lutz family that was to be the household name in ice in the Fox Cities.

Started by Lawrence W. Lutz in 1885, the Appleton company continued to cut ice on the Fox River and Lake Winnebago until 1931 and remained in business as the Lutz Ice Co. until it was sold in 1973.

The Lutz family eventually took over most of the other ice harvesting facilities in the area. The company began operations out of a house in the 700 block of E. Franklin Street. There were stables behind the house for the horses that pulled the ice wagons.

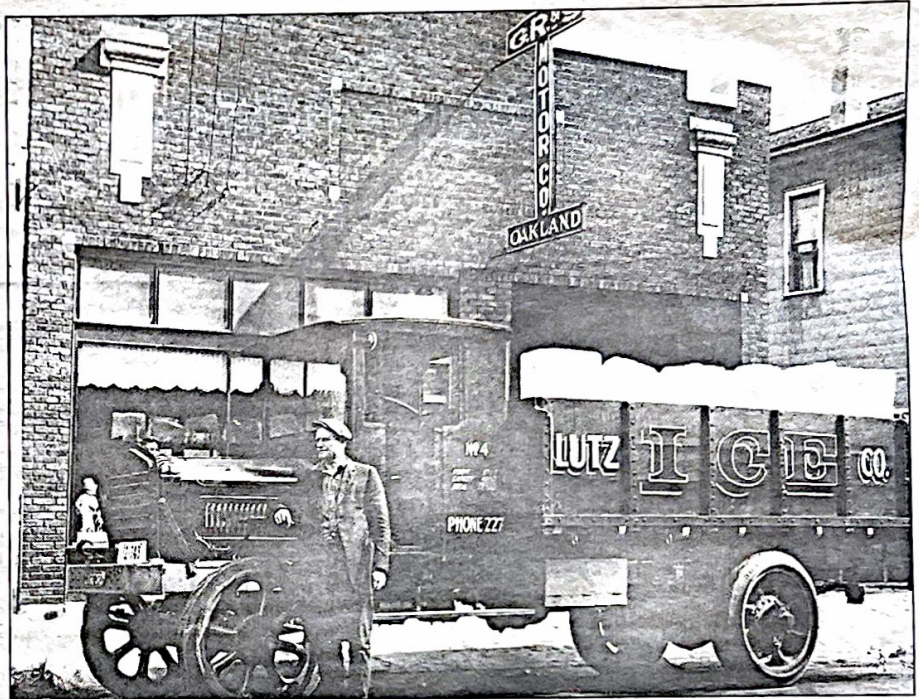
Helen Lutz Graham, Lawrence's granddaughter, is the last of a generation that remembers when ice harvesting was an important business in this area. As a child, she watched the men at work on the frozen river and the lake, and she remembers people lining the streets to get blocks of ice on summer days.

Graham recalls the warming cottages on Lake Winnebago, where the workmen came to eat and thaw out. And she remembers ice being loaded into boxcars full of cabbage.

While there were several Lutz ice houses, including those at Waverly Beach and on S. Oneida Street, near what would later be the location of the Cinderella Ballroom, one of the main buildings was adjacent to a primary river harvest site, at what in 1939 would become Lutz Park when the Orville Lutz family donated the land to Appleton.

In early days, ice harvesting was a demanding and dangerous occupation.

It took 75 to 80 highly skilled ice cutters from six to eight weeks to cut and gather the annual harvest and then get the huge slabs into the ice house and under sawdust and straw for safe storage through summer and until the next cutting season.



**ORVILLE LUTZ** became president of Lutz Ice Co. of Appleton in 1928. He is pictured in about 1920, when the ice in his truck was still being harvested from the Fox River and Lake Winnebago.

**It took 75 to 80 highly skilled ice cutters from six to eight weeks to cut and gather the annual harvest and then get the huge slabs into the ice house and under sawdust and straw for safe storage through summer and until the next cutting season.**

The implements used then are now the stuff of museums, such as the Neville Public Museum, along the Fox River in Green Bay.

"It's very popular. People are amazed," Marilyn Stasiak of the museum staff said of the permanent exhibit that includes a short film on ice harvesting on Green Bay in the early 1920s. The film is so impressive, the Smithsonian has a copy, she said.

There have been small ice harvesting exhibits at the Outagamie County and Oshkosh museums, but nothing at present.

Each crew that worked in the ice field had a spe-

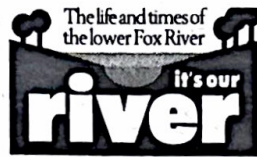
cific job. Plowers moved away the snow with teams of horses and wooden scrapers. Cutters used one-handed crosscut saws, usually about 5 feet long, with sharp, wicked teeth. Loaders moved the ice slabs from the cutting site to the elevators, resembling ski slides, where the ice cakes were loaded into the ice houses with the help of poles, pulleys, winches and horses. Wingmen worked at the top of the elevator, directing the ice blocks to stackers who made sure they were properly stored.

A skilled sawyer could cut 10-12 feet of ice per hour by hand.

Horses were critical to the ice industry before and just after 1900. They provided the power necessary to harvest the ice, get it to and into the ice house and, finally, deliver it to homes and businesses in the Fox Cities.

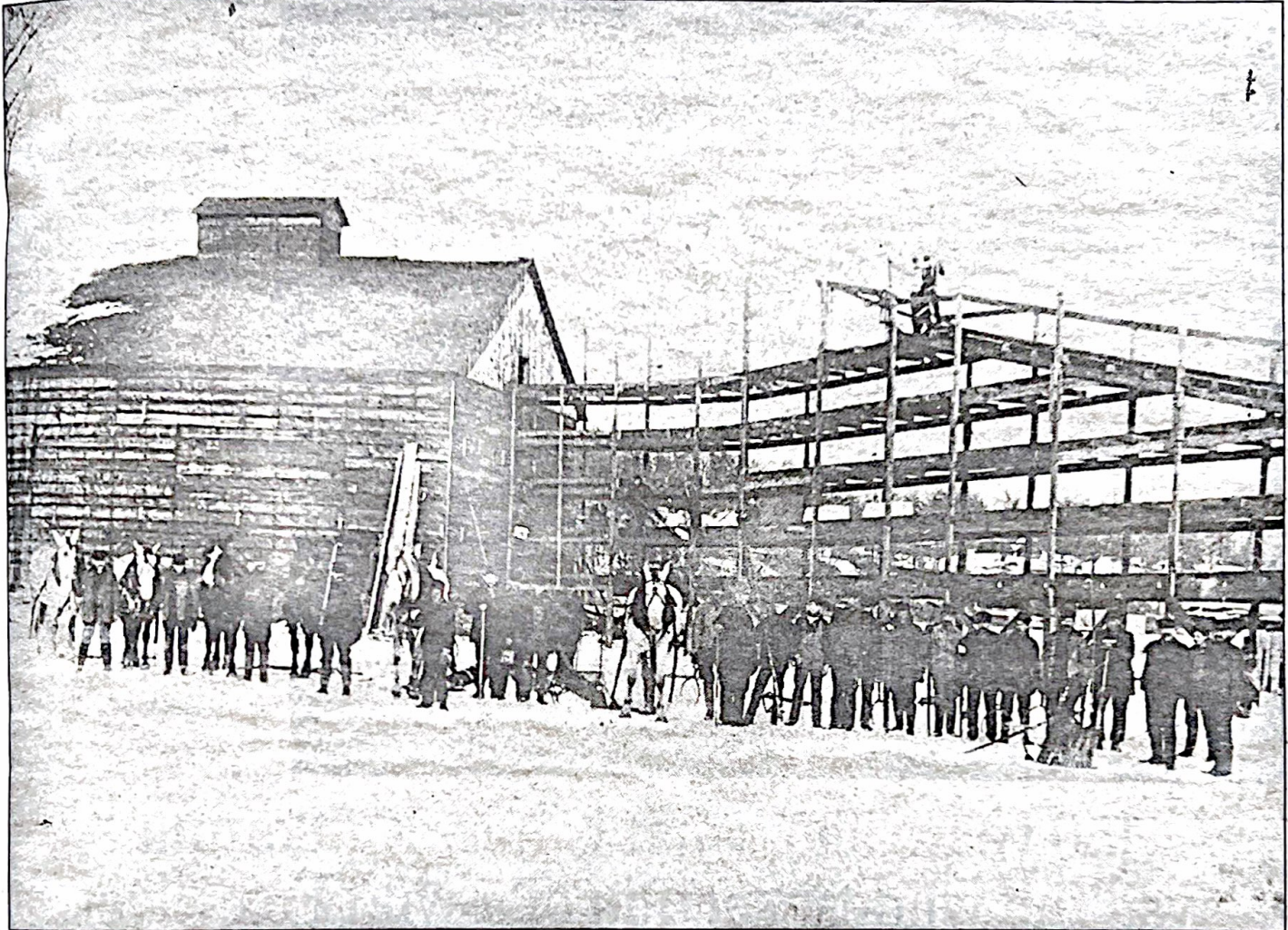
But, important as horses were, they also created problems. They occasionally slipped or broke through into open water. Usually they could be rescued using men, horses and planks. One would drown now and then, according to Chuck Rigden, a retired Lutz manager who recalls stories from the early days of ice harvesting.

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• BIRTH •

CONTINUED FROM PAGE 28



**ICE HARVEST** work crews stand with their tools and horses in front of the Lutz Ice Co. ice house in what is now Lutz Park, along the Fox River, in

Appleton about 1900. The skeletal-appearing structure at the right is the system of slides used to get the ice slabs from the river into the ice house.

## Ice: Lutz family a household name for ice

Then there was the problem of droppings from the scores of horses working the ice fields, something that probably never occurred to the youngsters who chased after the ice wagons scavenging ice chips to suck on hot summer days.

Ice harvesting on the Fox River and Lake Winnebago became more efficient with the coming of gasoline-powered circular saws, which whizzed

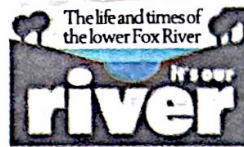
through foot-thick ice at 100 feet per minute, and with the steam and later gasoline-powered engines that ran the ice house's endless chain conveyors.

There was no longer the romance, the mystique of the ice harvest. And before long, the ice harvest on the Fox River would be a memory.

At Lutz, as at other ice dealers, newly-developed mass production equipment that turned fresh

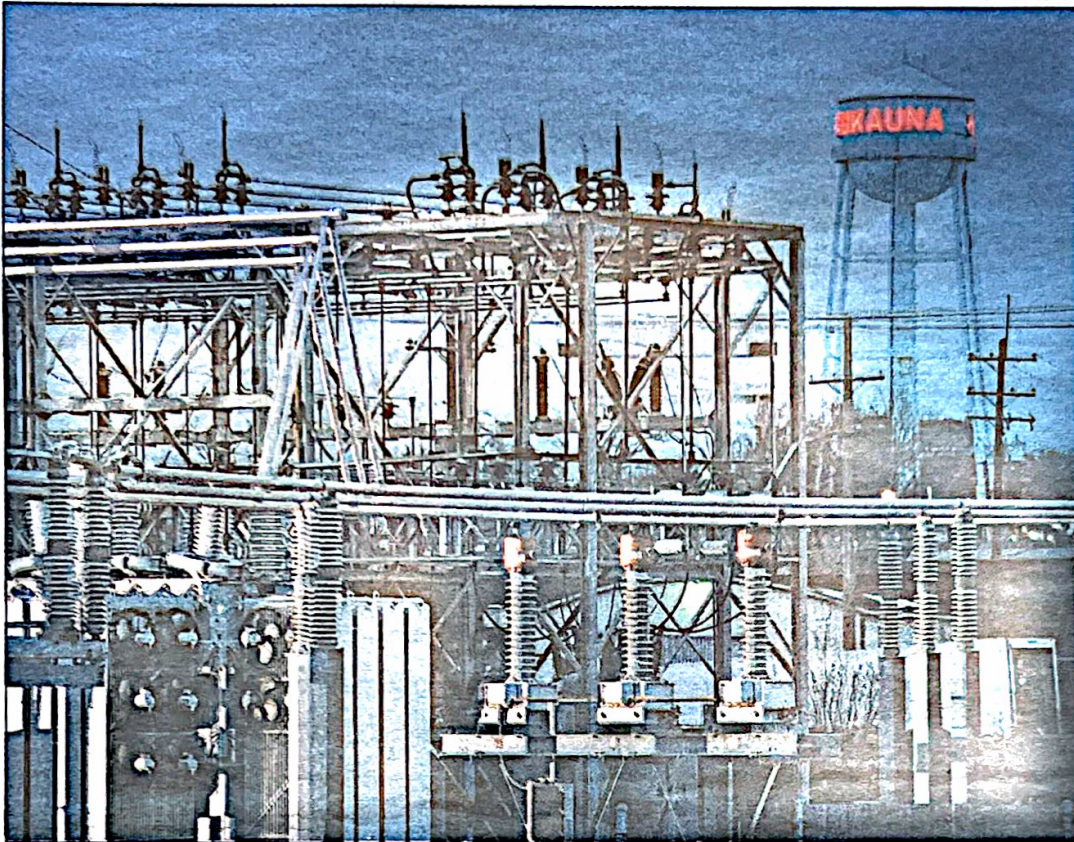
water into "plant ice" before your eyes replaced the costlier, less efficient natural harvest by the late 1920s and early 1930s.

And finally, the ice man, the last gasp of the colorful era of river ice, the man who hoisted the heavy block onto his shoulder and carried it, dripping, into the kitchen, faded into history, the victim of the electric refrigerator and freezer.



• B I R T H •

## RIVER TOWN: KAUKAUNA



**It was no accident that the current high school, library, former municipal building and old post office were built on the island created by the power canal and the locks canal. "They were put on the island to draw people together and to act as a buffer zone," Kaukauna Mayor John Lambie said.**

# 150 years ago, what is now Kaukauna was the wildest section of a wild Fox River

**By Don Castonia**  
Post-Crescent staff writer

**I**t's very simple. Kaukauna exists because of the Fox River.

Take away the rapids and there would have been no reason for anyone to stop at Grand Kakalin, as the area was known.

Rapids, you say? There is just the barest hint of them through the 1000 Islands area. But 150 years ago what is now Kaukauna was the wildest section of a wild Fox River.

The Fox drops 168.3 feet between Lake Winnebago and Green Bay. Nearly a third of that drop, 50 feet, takes place at Kaukauna. In addition, there is a 38-foot drop at Little Chute and another 38-foot drop at Appleton. Only a series of dams and locks hide what had to have been great whitewater kayaking.

Indians, fur traders and itinerant explorers going upriver from Green Bay had to portage at Kaukauna. In fact, the east edge of Kaukauna was really the last piece of navigable water between Green Bay and Lake Winnebago.

Mayor John Lambie said he understands the word Kaukauna means "gathering of the pickerel," possibly related to the fish going up the rapids to spawning grounds.

The miles of rapids must have generated a tremendous sound. "You could hear the area before you could see it," Lambie said.

The numbered streets in Kaukauna are on the south side of the river and start with Second Street. Second and Third streets are part of the river valley, but Fourth Street is part way up the hill. Lambie said he understands that before the dams and locks were built, the area all the way to Fourth Street would flood.

The Charles A. Grignon Mansion wasn't built where it is because of the view. That was as far upstream as a boat could go.

History tells us that Dominique Ducharme was the first white settler at Kaukauna. He was a fur trader in the late 1700s and built a trading post, house, barn and other outbuildings. His brother, Paul, took over the business and ran it until 1813.

He sold part of the land to Augustin Grignon and later decided the rest to Green Bay Judge John Lawe to settle his debts.

Despite the rapids, the Fox was a major transportation route from the earliest of times. An invading British army, traveling by canoe, came up the Fox River en route to Prairie du Chien where they captured Fort Crawford in 1812.

Settlers came up the river to Kaukauna, also mainly by canoe. By the 1830s Durham boats, which could carry 15 to 30 tons, were used.

The potential to use the fast-flowing river for power was not lost on the early settlers. In 1816, Augustin Grignon built a water-powered sawmill.

Lambie said "the river was the power supply."

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## Kaukauna: River city boasts wild history

Before the dams and locks there was a power canal built near the present high school.

"That supplied much of the water power for various mills," he said. "It wasn't translated into electricity, but it was water power, per se. It ran the early machinery."

One of those mills was built by George and Ira Hawley and George Lawe on the site of what is now International Paper's Thilmany division. That was in 1851.

The locks system was completed in 1856 with the paddle-wheeler Aquila being the first boat to go through the entire system.

The boat traveled from Pittsburgh, down the Ohio River, up the Mississippi and Wisconsin rivers, through the upper Fox from Portage to Oshkosh, and then down the lower Fox to Green Bay.

But the completion of the locks system also meant that getting through Kaukauna no longer required staying at a hotel or rooming house and stocking up on supplies for the major portage.

The fact that the water could run mill machinery also meant that it could run turbines to generate electricity.

The Kaukauna Water Power Company, a subsidiary of the Milwaukee, Lakeshore & Western Railroad, started supplying electrical power to res-

idents and mills in Kaukauna. In 1911 the city purchased the utility and has operated it ever since. Today, Kaukauna has one of the lowest electric power rates in the state.

At one time there were actually four different settlements at Kaukauna: Kaukauna and Springville were on the north side of the river and Ledyard and Statesburg on the south.



LAMBIE

Obviously, the four eventually merged to form Kaukauna.

But the river also is a barrier, separating the two halves of the city. "There was terrific competition between the north and south sides," Lambie said.

It was no accident that the current high school, library, former municipal building and old post office were built on the island created by the power canal and the locks canal. "They were put on the island to draw people together and to act as a buffer zone," Lambie said.

The competition is less intense today and the new high school is being built on the far south side of the city and the present municipal building is on the south bank of the river.

The post office is on the north side. But the city is still careful to balance public works and development projects to avoid slighting either the north-side or southside business districts.

But the river does pay dividends.

The 1000 Islands Environmental Center plays host to hundreds of school children every year, and the nature center and river walkway are popular year-round attractions.

Former Kaukauna Mayor Gil Anderson and former state representative Bill Rogers are credited with saving the scenic area for public use.

Lambie said he believes the river has the potential to play a continued role in Kaukauna's future. But, he concedes, "we're not the tourist attraction on the river that the Menasha marina is."

He said that even if the locks are rehabilitated and reopened, he doesn't see them being a major economic factor for the city.

However, the indecision on the future of the locks is holding up the city's plans to further develop its river trail.

"We would like to move further, to the Grignon property, but we have to go through corps (U.S. Army Corps of Engineers) property and they won't commit themselves until the locks situation is resolved," Lambie said.

### LAKE WINNEBAGO

## Dams set in motion a series of transitions for mighty Lake Winnebago

By Doug Erickson  
Post-Crescent staff writer

Bruce Johnson has heard the off-hand comments about how Lake Winnebago was "always" this way or that way.

About how algae blooms probably irritated even the dinosaurs, for instance.

"The veins start popping out of my forehead," said Johnson, executive director of Fox-Wolf Basin 2000, a nonprofit watershed organization. "When people say the lake was the same 300 years ago as it is today, I say, 'No, it wasn't. Sorry.' We really did transform that system."

The dams on the lower Fox River - first primitive ones in the 1800s, then larger ones in the early 1920s - had a dramatic effect on water levels, wildlife and vegetation upstream, said Art Techlow, Winnebago system biologist for the state Department of Natural Resources.

"What the dams did was cause the beginning of a series of major transitions," he said.

The dams had the greatest effect on the three upstream lakes of Winneconne, Poygan and Butte des Morts, Techlow said.

"By all historical accounts, prior to dams being installed, those upper pool lakes could more aptly be described as riverine marshes - broad areas of marsh grass, wild rice and other vegetation," he said.

"In some accounts, the explorers floating through these areas said they had trouble keeping track of where the flow was," Johnson said.

Probably 10,000 acres of emergent marsh, where plants emerge above the water's surface, has been lost to higher water levels in the upper lakes alone, Techlow said.

The rising water levels caused substantial swatches of spongy marshland to float like icebergs down river, sometimes clogging it. In 1906, 300 acres of bog lodged against the Oshkosh Avenue Bridge, Techlow said.

"I recall my grandfather telling me dynamite was used (to break up bogs) on at least one occa-

sion," he said.

The effect on Lake Winnebago was less dramatic but still significant, Techlow said. In a 1738 map, a large open body of water is shown where Lake Winnebago is today, he said.

"It was always a lake, just with more vegetation and wetlands," he said.

Techlow estimates that Lake Winnebago is probably 3 feet higher today than it would have been had the dams never been built.

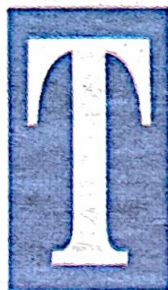
"You wouldn't have put in a dam one year and said, 'Wow, look what happened,'" he said.

The higher water changed the character of the lake, resulting in some favorable outcomes, such as increased recreational opportunities, and some less-positive ones, such as a loss of vegetation and wildlife habitat, Techlow said.

He stressed that the dams did not solely transform Lake Winnebago, although they did set into motion many of the changes. Soil erosion, excess nutrients and the introduction of carp are examples of other factors, he said.

# Railroad, shifting sands of Wisconsin River spelled doom for Fox as commercial highway

By Arlen Boardman  
Post-Crescent business editor



Thirty-nine years ago, Edgar and Fred LaBorde, two brothers from Kaukauna, steered their last tug-driven barge up the lower Fox River.

For them it was the end of four decades of barges hauling coal to paper mills and a power company in the Fox Cities.

It was also the end of a good living, said Gene LaBorde of Kaukauna, who remembers when his father

and uncle made their last runs in 1959, each with 400 tons of coal on a 140-foot-long barge, built just wide enough and long enough to fit alongside a tug in the locks.

They worked for the Fox River Navigation Co. of Kaukauna, one of two firms running barges.

The company was owned by its Fox Cities coal customers - Thilmany Pulp and Paper of Kaukauna, Kimberly-Clark Corp.'s Kimberly Mill, Inter Lake Papers (the old Consolidated Papers mill near the E. College Avenue bridge), Riverside Fibre and Paper Co. of Appleton and Neenah Paper Co.

In later years, it stopped serving Riverside and Neenah Paper, but added Wisconsin Michigan Power Co. of Appleton, the predecessor to Wisconsin Electric Power Co.

His father, Edgar, worked hard, Gene said. He made trips six days a week, spending 14 or more hours on the 60-mile round-trip and often sleeping on the tug.

The end of the LaBorde brothers' careers was also the end of regular use of the Fox as a commercial highway.

The tug-towed coal barges represented almost the only lower Fox commercial traffic during the 20th century on a river stretch that never really met expectations.

The white man had the expectations of big possibilities of a Green Bay-to-Mississippi River connection, a dream that gained prominence in the 1820s and 1830s.

According to the Kraftsmen, a newsletter of International Paper's Thilmany Division, "...it was planned at one time that the Fox River (would) be the main artery for all commerce that came out of the East."

Many factors contributed to the failure, but it was the advent of rail service and the unpredictable sandbars of the Wisconsin River that discouraged any major shipping across the Wisconsin water route.

Please see SHIPPING, Page 34

## PORTAGE CANAL

### Time and nature severed connection between upper Fox, Wisconsin River

By Ed Lowe  
Post-Crescent staff writer  
Portage



his is the place two of the state's major rivers - the Fox and the Wisconsin - converge but do not meet.

It took an ambitious act of man, the Portage Canal, to link them, creating an unbroken waterway from Green Bay to New Orleans.

The connection succeeded for a time, but not to the satisfaction of those who spent more than a century digging and maintaining it.

Eventually, time and nature battled the canal into submission, leaving behind a 2-mile long question mark still begging to be addressed in this city, the third oldest in the state.

Today, not a drop of water passes from the Wisconsin to the upper Fox, because a massive levee is under construction between the two.

The \$8 million flood control project by the U.S. Army Corps of Engineers has temporarily severed the shallow link between two watersheds, ceasing for now even the trickling waterfall at the ruins of the canal's Fox River lock.

The canal, once considered critical to the settlement of the American Northwest, closed to through traffic in 1951. It has served no measurable purpose since.

"The biggest problem with the canal and the (Wisconsin) river has always been the shifting sand," summarized Blanche Murtaugh, past president and spiritual leader of the Portage Canal Society, formed in 1977.

The society has been caretaker and advocate for this 2-mile stretch of nearly stagnant water and weeds. Before the society arrived, the swampy depression became literally a dump, a conveniently unprotected storage bin for trash.

Thanks to the efforts of the society, which Murtaugh says now boasts several hundred members, the canal is free of tires, soda cans and the like.



Post-Crescent photo by Mike De Sisti

**ONCE AN** unbroken waterway from Green Bay to New Orleans, the 2-mile-long Portage Canal has been beaten into submission by time and nature.

But, without a current, it is more tolerated than appreciated by many residents in this city of nearly 9,000, whose growth in recent years has come in spite of the past-tense waterway.

"The Canal Society has done a lot of work to make the canal aesthetically pleasing and it (the canal) has come a long way," said Bill Tierney Jr., acting Portage mayor.

The construction of the levee, due for completion next year, has stalled the canal's rehabilitation only temporarily, Tierney suggested.

"Once the levee's in place, that might turn some attention to the canal in terms of improvements," he said.

The city has been reluctant to pump money into a canal it neither owns nor wants, he con-

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## Canal: Waterway link now a broken dream

ceded. Ownership of the property passed from the U.S. Army Corps of Engineers to the state via a quitclaim deed in 1961. Two decades later, the Department of Natural Resources begrudgingly assumed ownership and has done little if anything to maintain it since.

Murtaugh said she holds the city's leadership responsible for the canal's decline, having failed to demand that the DNR restore, or at least maintain, the property, one of eight Portage sites listed on the state Register of Historic Places.

"I agree (with Murtaugh) 100 percent," Tierney said. "It's going to take decisive action by local politicians before anything major is going to happen there. I have never been the strongest advocate of a total restoration of the canal, but I certainly realize we can't ignore the issue forever."

"Certainly, it's an eyesore as it now stands," he said. "We probably should quit stalling and decide what we're going to do with it."

One alternative to restoration would amount to the canal's annihilation. Murtaugh said that was explored in recent years, but that, too, would be no inexpensive task. She said a relatively recent estimate of the cost of filling in the canal came in at \$4 million.

Thus, Canal Society treasurer Rita Fredrick said the canal's supporters have adjusted their goals to fit the realities of the times.

"We focus on its preservation," Fredrick said while hosting visitors at the Old Indian Agency House, an 1832 structure that overlooks a canal bogged with algae and weeds. "We'd at least like to keep it from getting any worse."

By appearances, the canal is at its lowest ebb. It is stagnant and will remain so until the levee is finished, at which time the flow will be restored via a pipe extending into the Wisconsin.

The canal's construction began in 1835, shortly after the completion of the Erie Canal triggered a host of ambitious projects designed to speed development of the American frontier.

To the mapmakers, there may have been no more logical place to construct a waterway.

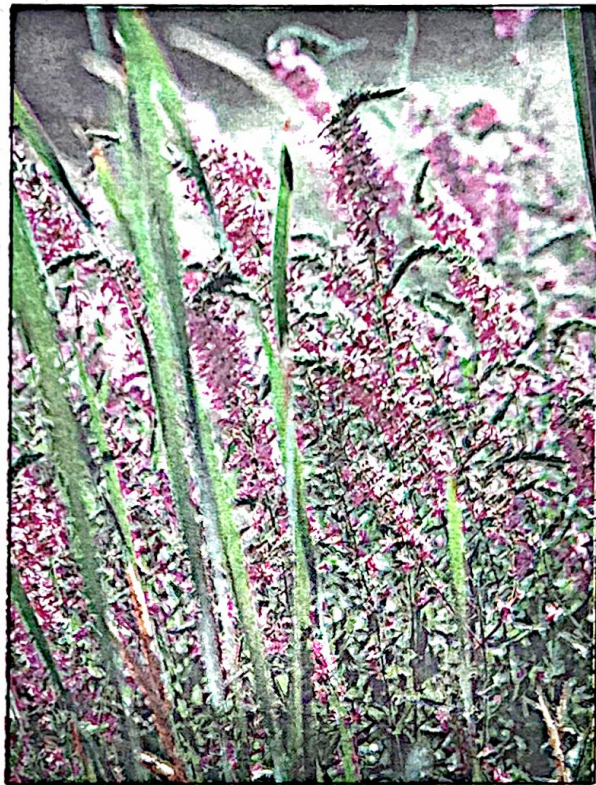
Fort Winnebago, the state's third government outpost, was started here in 1828 to take advantage of the near-connection of the two rivers, separated only by a 2-mile overland trek. Thus, early French trappers had named the site "le portage."

The owners of the ill-fated Portage Canal Co. underestimated the amount of work and money the venture would require and went bankrupt in 1838, after four frustrating years.

The project sat idle until 1849, when the federal government stepped in to finish the job, recognizing the military value of an unbroken thoroughfare connecting its forts at Green Bay, Prairie du Chien and Portage.

Two years later, the endeavor was far enough along to invite an attempted crossing from the Fox to the Wisconsin by the steamer John Mitchell.

With crowds of onlookers cheering her along, the vessel appeared destined to reach its goal until it encountered the Enterprise, another steamboat,



approaching from the opposite direction. With neither crew relenting, both eventually backed out of the canal, which wasn't traversed by a steamer until 1856.

By that time, the state's first railroad, opened between Milwaukee and Waukesha in 1851, was on the verge of reaching Prairie du Chien, which is southwest of Portage.

"It's said that when that first (steam) ship went through the canal, in the distance was the sound of the railroad coming through," Murtaugh said.

The federal government, already realizing the superior potential of the railroad, grew weary of the canal-digging business quickly. It passed the property into the hands of the Fox-Wisconsin Improvement Project, a commercially supported state effort designed to harness and develop the Fox-Wisconsin corridor.

The federal government took over that troubled project in 1876, 10 years later dropping the Wisconsin River portion of the project from consideration for further development as a major transportation route due to its shifting banks and temperamental character that prevented dependable travel by larger boats.

All along, the Wisconsin pumped sand into the canal, meaning it had to be dredged frequently to remain operational.

**By appearances, the canal is at its lowest ebb. It is stagnant and will remain so until the levee is finished, at which time the flow will be restored via a pipe extending into the Wisconsin.**

**LOOSESTRIFE AND** a host of other wild flowers and weeds have taken the place of flowing water that once made up the Portage Canal.

Post-Crescent photo by Mike De Sisti

By the turn of the century, the canal had already ceased to play a major role in state commerce. In 1951, when it was used by only pleasure boats, it was closed, along with the nine locks on the upper Fox.

Murtaugh is working on getting signatures on a petition demanding that the DNR abide by a state statute mandating that the state promote and develop its properties listed on the state historical register. So far, she's collected 700 names.

"Here we (the canal society) are trying to promote and protect something that doesn't even belong to us," she said.

"But if we want something done with it, first we have to make it look like it's something worth saving."

Murtaugh remains optimistic that someone will figure out that restoration of the canal will be worthwhile from a financial perspective, perhaps as part of a major local tourism effort similar to one proposed by an architectural engineering firm in the mid-1960s.

Others here are clearly less convinced of the canal's potential benefit to the community.

Indeed, a brochure issued by the Portage Chamber of Commerce highlights the city's rich history but makes no mention of the one thing for which the city is best known.

CONTINUED FROM PAGE 32

## Shipping: Locks, dams conquered lower Fox

The locks and dams eventually conquered the lower Fox, but the dreamers and builders ran into problems to the west, said Virginia Crane, retired history professor from the University of Wisconsin-Oshkosh.

"As soon as they got into the Wisconsin River, lo and behold, the shifting sandbars...they had an awful time," she said.

"That's one of the reasons why the whole project collapsed," she said. "It might have succeeded if not for that."

Even if it had, rail service probably would have cut short its heyday.

"That navigation route turned out to be a disappointment," Crane said. "It served in emergencies and it served in great difficulties (but) the dream was never really fulfilled."

Long before 1830, though, the lower Fox had been a highway of commerce. Back to the 1700s and perhaps the 1600s the Chippewa, Ottawa and Menominee tribes, plus a few French and British fur traders, traveled its dangerous rapids.

The Fox from Lake Winnebago to the Green Bay was treacherous, with a 40- and 50-foot rapids drops. Historians say only the Indians, especially the Menominee, were adept enough to maneuver loaded birch bark canoes on the route.

The Indians transported furs taken from interior Wisconsin territory to Green Bay, and early white settlers occasionally hired the Indians to transport them, too, because the wilderness along the Fox was almost impenetrable.

Crane said fur trading may have started in the 1600s.

In any case, "by the time the (Augustin with sons Charles and Alexander) Grignons established their (trading) post at Butte des Morts (in 1817), they were trading (almost exclusively) muskrat skins," she said.

The French used the bateau, a sturdy boat usually manned by 10 or 12 Indians. That was supplanted starting in 1825 by the Durham boat, which carried more cargo - 15 to 30 tons - and had a smaller crew.

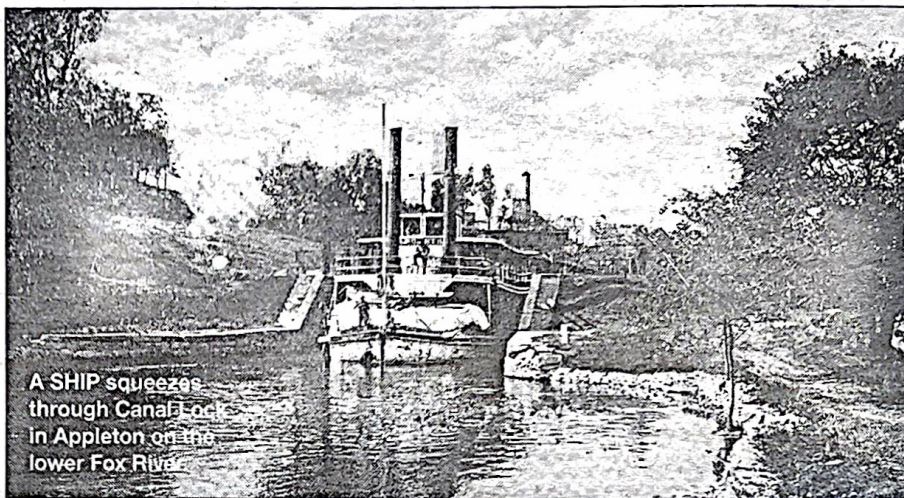
John P. Arndt of Green Bay built the first for the Fox and by 1830 had a "brisk business" of heavy traffic.

The Durhams brought everything from turnip seeds to calico to cattle and sheep, which Green Bay families sent to their relatives living in the wilderness that is now the Fox Cities/Oshkosh area, Crane said.

A steam-powered boat arrived on the Fox in 1821, before the Durhams, but the steamboats did not play a big role in river commerce until after 1850.

"When the new lock and dam was completed at De Pere in 1850, the steamer, Indiana, captained by William O. Lyon, began a regular schedule of trips between Green Bay and Kaukauna...." the book, "The Land of the Fox," reported.

The steamboats hit their stride in the 1860s and 1870s when they were carrying "passengers and freight, including sugar beets, potatoes, lumber, laths and shingles, grain, flour and feed, butter and



A SHIP squeezes through Canal lock in Appleton on the lower Fox River.

cheese, brick, barreled beer, salt, tanning bark, clover seed, lime, meat and general merchandise," according to an April 1972 article in the Kraftsman.

In 1854 the first tugboat steamer, called a "grouser tughull," began towing logs from rafting places to sawmills. These tugs were up to 100 feet long with a 20-foot beam.

The lower Fox was the rambunctious leg of the river system around Lake Winnebago. The Wolf from the north and the upper Fox from the west had modest elevation changes, but the Fox dropped 160 to 170 feet from Green Bay to Lake Winnebago.

The push to bring locks and dams, and control, to the lower Fox came nearly 20 years before Wisconsin became a state in 1848. The promoters envisioned collecting fees at the locks.

The first man to conceive of the idea of the Great Lakes/Mississippi connection was believed to be Morgan L. Martin of Green Bay, who was a delegate in 1831 to the Michigan state council.

The canal system was completed by 1856. "The first boat to pass up the canal was the Aquila, which had come up from Pittsburg(sic)," the Sentinel reported.

Despite this accomplishment, millions of private and public dollars were spent for another 30 or 35 years in an ultimately unsuccessful attempt to improve and revive the water route's declining importance.

Crane said the Mississippi to Green Bay route hardly had time to get off the ground in the mid-1850s when the railroad began to infringe.

"The railroad route obviously was the thing that stopped the whole thing," she said.

By 1872 commerce on the lower Fox had waned as the railroads and road travel grew in importance. The region was being converted from the wilderness of the early 1800s.

One report said, "From the day the United

States took over the waterway in 1872, it was beset by a number of vexing problems."

Its problems and declining commercial highway value didn't stop the politicians.

Crane said millions of dollars of government funds were spent in the 1870s and 1880s trying to dredge the upper Fox and the Wisconsin River to revive the dream.

"It didn't work," she said.

Into the 20th century, the lower Fox still supported commerce, but it was no longer getting much in the way of financial or political attention. It just kept plodding along.

"As the railroads were built and roads became better, more commercial products moved by other methods than by boat," the Kraftsman reported. "Coal, pulpwood and other commodity items, however, were still carried on the canal."

Abb said it shouldn't be forgotten that the Fox Valley was once a major grain-producing area and a milling market before that industry moved west to Minneapolis-St. Paul.

After 1959, the lower Fox got almost no use as a commercial highway, giving way to predominant use as a recreation boat traffic river.

In the 1970s and '80s, the river was used occasionally for large machinery movement. In the 1980s, Wisconsin Tissue in Menasha and Thilmann in Kaukauna each moved giant paper machine dryers to their plants by barge because the units were too big for railroad or truck shipment.

But those daily shipments of coal moving snail-like on giant barges up the Fox were long forgotten by most people.

Not Gene LaBorde, though. The tugged barges and their coal had provided his family with their livelihood.

And he knew that his father had loved running the routes.

"It was in his blood, the river," Gene said.

CONTINUED FROM PAGE 6



## Tribes: River rich with tradition and legend

together to the Winnebago hunting grounds west of the Mississippi.

By 1630, both tribes had established at least temporary villages on the Fox River and its connected lakes.

"Along the Fox River and at lakes Winnebago, Butte des Morts and Poygan," historian Robert E. Bieder wrote in his book, "Native American Communities in Wisconsin 1600-1960," "the water teemed with fish and waterfowl, the latter drawn by the profusion of wild rice, which at times obscured the shores of the lakes and so blocked the rivers as to hinder canoe travel."

Owing to the accessibility of their food supply, the Menominee and Winnebago maintained villages in the same locations over long periods of time, and unlike more nomadic tribes, developed stable societies.

### THE EUROPEANS

**T**he Menominee and Winnebago's bucolic lives began to change dramatically about 1630.

The French fur trade began to play an increasingly important role in regional economics and politics. As the beaver population around Lake Ontario in Canada became depleted during the 1630s, the trade-dependent Iroquois nation began an aggressive campaign to conquer new hunting grounds, held by Algonquian tribes along lakes Erie and Huron.

Many of the Algonquian tribes fled, first to Upper Michigan, then to Wisconsin. The immigration strained the area's resources.

Bieder attributes the outbreak of war between the Ottawa - middlemen in the fur trade around Green Bay - and the Winnebago to tension from this new pressure on ecology and food supply. The dispute threatened the fur trade on the Fox River, and Nicolet was dispatched to Green Bay in 1634 to negotiate peace.

The effort failed, and the Winnebago, with their Menominee allies, escalated the war on the new arrivals.

Among these were the Fox, or Outagamie. The French bestowed the name les Renards - French for fox - on this group, whom historians often describe as "fierce." The Menominee called them "Outagamie," meaning "dwellers on the other shore."

From the Iroquois, who had fought the French for control of the fur trade, the Fox got the idea of collecting tolls from traders on the Fox River.

According to Goc, "they erected a series of fortified villages on Little Lake Butte des Morts, Lake

Winnebago and Big Lake Butte des Morts, and used them to put a stranglehold on the traffic in pelts."

The Fox would put a torch on the bank as a signal to passing traders they should come ashore and pay the toll.

The river was a Fox stronghold for nearly 50 years.

The region suffered badly from the tribal wars, Bieder wrote, and game scattered. Some of the immigrant tribes, and perhaps Nicolet, brought disease. It is believed both the Menominee and Winnebago populations were diminished by smallpox in the mid-1600s.

Peace between the French and Iroquois came in 1663. With the end of the war, the French were free to concentrate on the fur trade, and expanded their stakes in Wisconsin, where beaver were still relatively plentiful.

The economic lives of the Menominee and Winnebago became more tethered to the fur trade and less time was spent in fishing and gathering.

The Fox, who based their economy on agriculture, were less dependent than other tribes on trade with the French, except, perhaps for the tolls they exacted from traders.

By 1712, the French were fed up with the Fox and their interference with trade. For the next 25 years, the French waged what Goc calls a war of extermination against the Fox.

The Fox were essentially a broken people by 1733, when they lost the battle that gave Little Lake Butte des Morts its name - "hill of the dead."

The Winnebago had sided with the Fox. In retaliation, the French burned the Winnebago village on the lower Fox River.

The Fox defeat was a cathartic event in Fox Valley history.

"If the Fox had not fought to hold the Fox-Wisconsin waterway, other routes might never have developed," Ellen Kort wrote in her book, "The Fox Heritage."

"If the Fox had been submissive, French rule in the west might never have wavered."

Under British rule, beginning in 1761, the fur trade flourished and Europeans exerted greater influence on the Fox River Indians.

The tribes became dependent on trade, even for foods they had previously gathered from native plants.

The Europeans introduced the Indians to alcohol.

Explorer Zebulon Pike reported that traders found it to their advantage to offer alcohol to the Indians while they were negotiating the price of furs, but traders also complained about problems alcohol created.

"Although some traders deplored the use of liquors in the trade and believed it was a 'curse to the Natives,' since it destroys communities, instigated quarrels and revived old ones, and 'kept the Indian poor,'" Bieder wrote "it was too attractive a trade item to give up."

According to Kort, Dominique Ducharme bought all of what is now Kaukauna from the Menominee for two barrels of rum. When some members of the tribe complained, Ducharme threw in six more barrels.

### THE TREATY YEARS

**L**ike the French, the British were primarily interested in the fur trade, not in the tribal lands, Bieder said. With the American Revolution, that tack was to change.

"Between 1800 and 1850, through subterfuge, retaliation, and sale, Americans in Wisconsin wrested lands from Indians until they occupied with uncertainty lands they once owned," he wrote.

Oneida tribal historian Loretta Metoxen called the policy "divide and conquer."

The tribes did not generally view property as something that could be sectioned off and owned individually, Metoxen said. The concept of boundary lines was foreign to the Indians. When they first ceded their lands, the tribes, according to Metoxen, thought they were granting an easement to the whites, rather than relinquishing their property rights.

With great pomp, Bieder wrote, the U.S. government gathered Indians from Wisconsin, Michigan and the Mississippi Valley at Prairie du Chien in August 1825.

The purpose was to separate Indian confederations into tribes, and to assign boundaries to tribal lands.

Setting boundaries between these tribal properties paved the way for later cessation.

Maps show the Winnebago lands extended from Lake Winnebago on the east to the Mississippi River on the west and as far south as Illinois.

The Menominee held land from Marinette in the north to Milwaukee in the south.

The Chippewa territory included most of northern Wisconsin.

The remaining Fox Indians in Wisconsin had been the first to cede their land in southern Wisconsin in 1804. A later dispute over that cessation grew into the Black Hawk War.

In an 1817 treaty, the Menominee did not give

Please see TRIBES, Page 36

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## Tribes: River rich with tradition and legend

up any land, but acknowledged the sovereignty of the U.S. government.

In New York, meanwhile, the Oneida were beginning to feel pressure from the federal government to turn over their lands and move west.

According to tribal documents, the Oneida yielded 5.3 million acres in New York between 1785 and 1788.

Metoxen suspects the Federal Government and the Ogden Land Co. were after the Oneida's direct access to the Erie Canal. When they cajoled the Oneida - and their neighbors, the Stockbridge, Munsee and Brotherhood Indians - to by land near Fort Howard in Wisconsin.

The Oneida were also persuaded by the urging of Eleazer Williams, an Episcopal minister who claimed to be the "lost dauphin" of France, Louis XVI.

"The men the Oneida trusted the most were foxes in the hen house," said Metoxen.

Fifteen years of confusion and turmoil began with the Treaty of 1821, in which the Menominee and Winnebago agreed to cede approximately 804,000 acres along the Fox River to the New York Indians. The sale price was \$2,000.

In the treaty, the Menominee and Winnebago retained the right to the land for hunting and fishing.

The New York Indians were unhappy with both the location and the size of the property, and petitioned the federal government to arrange for the purchase of more land.

"The Menominee, under pressure from the government, agreed, but the Winnebago, who were against conceding more land, left in disgust and later complained about the cessation," Bieder wrote.

According to historian Patricia K. Ourada, the Menominee sold a total of 6.7 million acres between Green Bay, Sturgeon Bay and the Fox River to the New York Indians for about \$4,000 in a second cessation in 1822.

Those tribes sold a portion of the land to the Brotherton Indians.

The first group of Oneida settled in what is now the Grand Chute and Kaukauna area. The Stockbridge, Munsee and Brotherton tribes also established villages on the river.

The arrangement was never neighborly.

According to Bieder, resentful Menominee and Winnebago harassed the Oneida and killed their livestock.

The Menominee attempted to void the treaty, arguing their chiefs had not negotiated it.

The Menominee were without a chief when they were called to a meeting in 1827 with the Winnebago and federal agents at Butte des Morts.

There, the government, reluctant to negotiate another treaty without a chief, appointed 32-year-old Oshkosh chief of the Menominee.

The parties departed Butte des Morts with the fate of the New York Indians delegated to President John Quincy Adams in a treaty the Menominee would later refuse to acknowledge.

A similar meeting, a year later, also ended in stalemate.

The president in 1830 sent a trio of commissioners to Wisconsin in an effort to resolve the controversy between the Winnebago, Menominee and New York Indians.

In what was ultimately to be known as the "Stambaugh Treaty," the Oneida tribe was to retain 500,000 of the New York Indians' millions of acres.

The Stockbridge and Munsee tribes were allotted 46,800 acres on the east side of Lake Winnebago. The Brotherton Indians retained 23,040 acres.

If, within three years, those Oneida who remained in New York had not relocated to Wisconsin, the earlier emigres would each receive 100 acres. The rest would revert to the U.S. government.

The 2,500,000 acres on the southeast side of Green Bay, Lake Winnebago and the Fox River again became Menominee land, which they then handed over to the government for \$20,000.

The treaty further granted the president the right to reclaim the rest of the Menominee's land when the government felt the need to do so.

It would not become clear to the Menominee until 1836 what the terms of the 1831 treaty really meant.

The Treaty of 1831, signed into law July 9, 1832, also "made provision for the 'weaning' of the Menominee from their wandering habits, by attaching them to comfortable homes," Ourada writes.

To accomplish this, missionaries developed Winnebago Rapids, a utopian community where the Menominee were to live in block houses, attend school and operate a sawmill.

The course set in 1831 culminated near Kimberly on Sept. 3, 1836.

The annuities the government paid were not enough to sustain the Menominee, Oshkosh had complained to a government agent.

The tribe, Ourada writes, was ready to sell more land.

The federal government saw in the tribe's financial straits an opportunity to remove the Menominee west of the Mississippi. Negotiations began Aug. 19, 1836.

In the Treaty of the Cedars, the Menominee

sold what is now Marinette, Oconto, Appleton, Neenah, Menasha, Oshkosh, Wausau, Wisconsin Rapids and Stevens Point - 4 million acres - to the federal government for \$700,000.

The Fox River Valley was open for white settlement.

Chief Oshkosh later said, "The only time Americans shook hands was when they wanted another piece of Menominee land."

In 1838, when the balance of the Oneida had not arrived in Wisconsin as planned, the government repossessed all but 65,000 acres of the New York Indians' land.

Meanwhile, the Winnebago had been forced to cede their lands south of the Wisconsin River as punishment for their role in the Black Hawk War. In 1837, they relinquished the rest of their Wisconsin territory, and most moved west of the Mississippi.

In 1848, William Medill, U.S. commissioner for Indian affairs, visited Wisconsin for the purpose of buying the rest of the Menominee land and finish the job of relocating the tribe west of the Mississippi.

According to Ourada, Medill was authorized to offer the Menominee \$571,840 for their remaining 3 million acres. Medill offered \$350,000 and 600,000 acres in northwestern Minnesota.

When the tribe balked, Medill threatened to remove them without payment. The Menominee accepted the offer.

During an exploratory trip to the Minnesota lands in 1850, Oshkosh determined the bounty of the area's resources had been misrepresented. Oshkosh refused to move his people by the 1852 deadline, and with the support of white settlers in the area, successfully petitioned the government to grant the tribe a tract of land on the Wolf River.

The Menominee Indian Reservation was established in the Treaty of 1854.

The Stockbridge, Munsee and Brotherton Indians bought a small portion of the reservation from the Menominee and relocated to what is now Shawano County.

The Menominee ultimately received an \$8.5 million settlement from the federal government.

On the advice of the tribe's attorneys, Ken Fish, director of the Menominee Treaty Rights and Mining Impacts office, declined to discuss the tribe's treaty history and its effect on the Menominee.

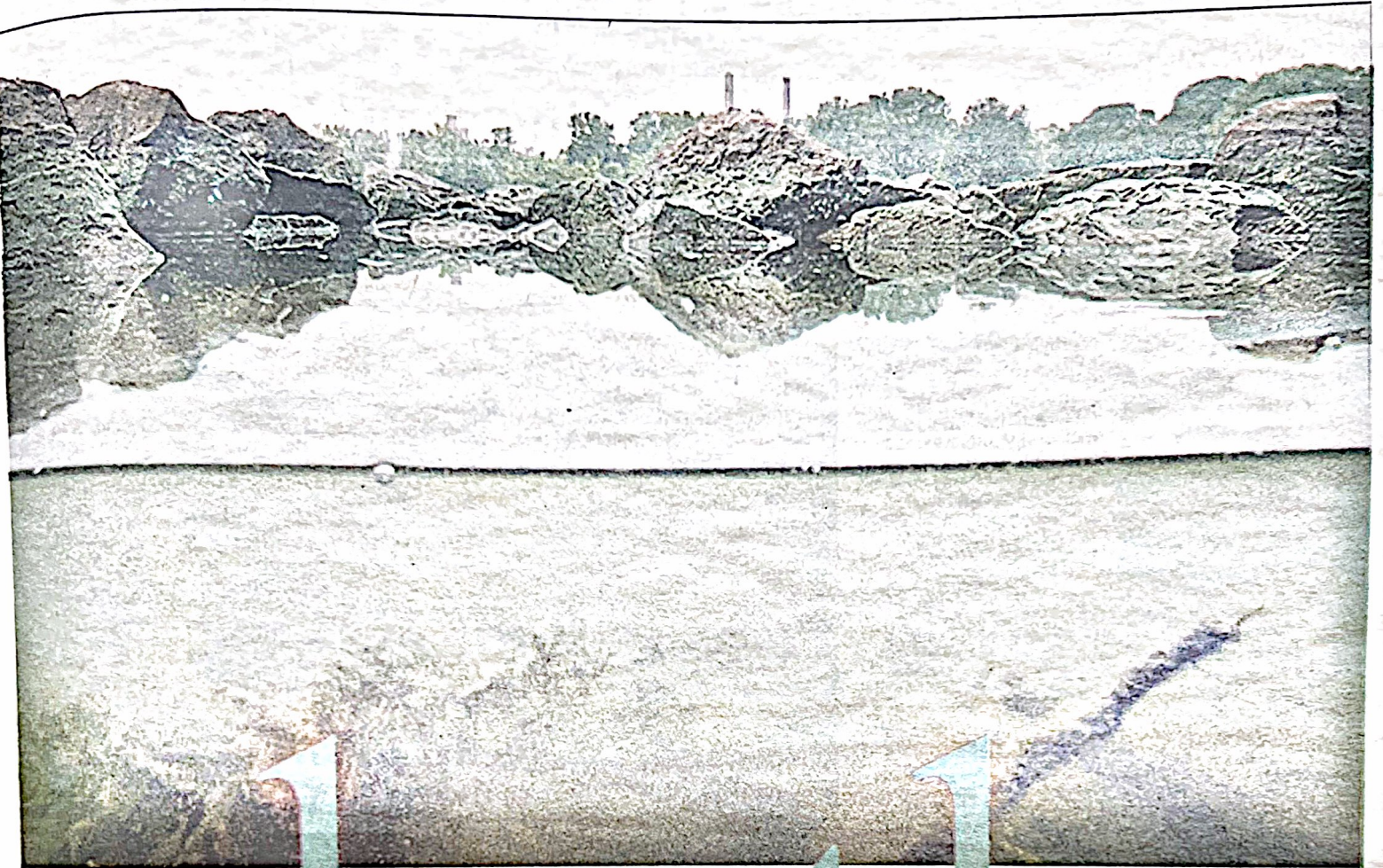
The Menominee in 1995 sued to regain hunting and fishing rights on their ceded 10 million acres. The tribe claimed its leaders did not understand they were signing away their usufructuary rights.

U.S. District Judge Barbara Crabb dismissed the tribe's claim in late 1996.

The Menominee have filed an appeal.

THE POST-CRESCENT

SUNDAY, OCTOBER 4, 1998



Post-Crescent photo by Mike De Sis

# death



The life and times of the lower Fox River

## POLLUTION HISTORY

# 'World's hardest-working river' has had its fair share of pollution cleanup efforts

By Andy Thompson  
Post-Crescent staff writer



Historians called it the world's hardest-working river.

Beginning in the 1800s, loggers, farmers, trappers, traders, industrialists and communities tapped the Fox River for commerce, power, pulp production and transportation as the river blossomed into an indispensable resource.

But the massive development up and down the

Fox came at a heavy price.

It was a dumping ground for waste — ranging from sawdust to pulp to household and municipal discharges. The river was described as "the sewer into which everyone thoughtlessly dumped the wastes of home and industry."

The pollution stirred cleanup efforts — some of which were more successful than others — and the eventual involvement of state and federal regulators in the 1900s. In addition, as far back as the 1920s, the pollution of the lower Fox spurred the formation of groups of environmentally minded people who were outraged over the condition of the river.

"Everybody dumped their wastes into the river," said Paul Wozniak, a De Pere resident who is the research director of the Fox/Wolf Rivers Environmental History Project. "(Conservationists) saw firsthand the damage to fisheries and bird life. They saw dead fish and the dwindling population of all kinds of wildlife."

According to a state Department of Natural Resources report on water quality modeling, the high gradient along the lower Fox was a natural developmental point for the lumber industry, which used water power to run its sawmills.

Toward the end of the 1800s, the lumber industry began a steady decline as Wisconsin's virgin forests were depleted. The secondary growth of pine were used for a new forest products industry: paper production.

That phenomenon again spurred development on the Fox, the report stated, as the vast supply of pulpwood, fresh water and water power was a magnet for expansion of the paper industry.

"This new water use began to take a heavy toll on the lower Fox River," said the 1980 DNR report.

Water pollution from paper industry sources went largely unchecked till recent times. Paper mill pollution together with the steadily growing pollution loads from the expanding urban centers combined to severely degrade the Fox River. The organic pollutants from both the industrial and municipal sources depleted the oxygen resources of the stream and fish kills became more frequent."

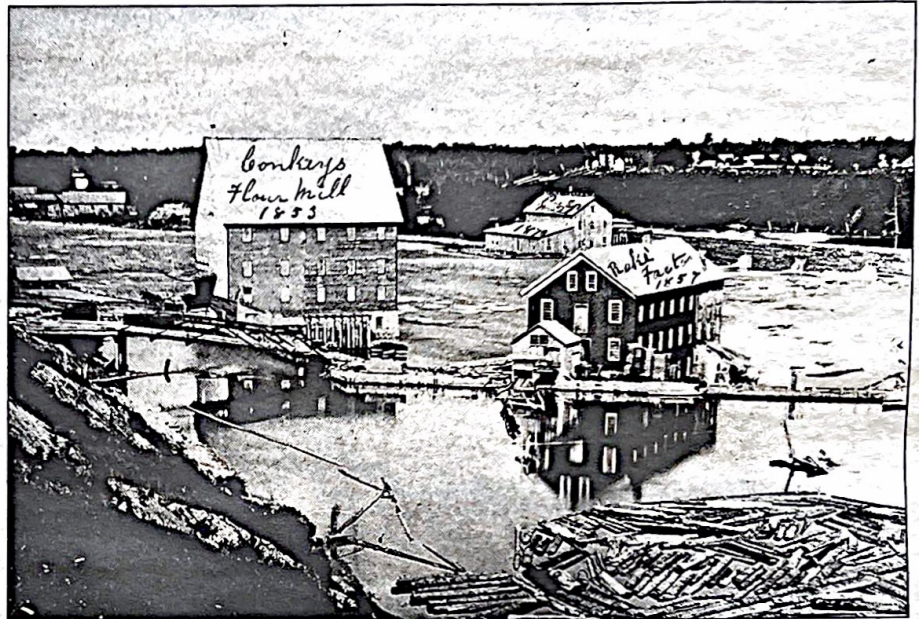


Photo courtesy Outagamie Historical Society

**AS THE LUMBER** industry began a steady decline toward the end of the 1800s, a new phenomenon spurred development along the Fox River, as the massive supply of pulpwood, fresh water and water power proved a magnet for expansion of the paper industry.

**According to a state Department of Natural Resources report on water quality modeling, the high gradient along the lower Fox was a natural developmental point for the lumber industry, which used water power to run its sawmills.**

In a report by the Wisconsin Policy Research Institute on "New Strategies for Environmental Problems in Wisconsin," it was noted that the Fox River emerged "as one of the most important paper-producing centers in the world."

"The Fox River became known as the world's hardest-working river. Industrialists dammed its 170-foot drop from Lake Winnebago to Lake Michigan in more than a dozen places to generate elec-

tric power to run the mills. The river served them in many ways. They tapped it to provide water for making pulp. They used it to float pulpwood to the mills. And they used it as the sewer into which everyone thoughtlessly dumped the wastes of home and industry."

Wozniak said the accounts of pollution in the Fox date back to the late 1800s, when people along the river noticed great damage to the fish populations.

"It was well-recognized at the time that the sawmills that operated dumped huge quantities of sawdust in the river," he said.

When the paper industry began in earnest in the late 1800s and early 1900s, pulp mills dumped ground-up wood mixed with chemicals into the river. Breweries, canneries and cheese plants added to the pollution problem.

"Definitely, it was tied to urbanization and industrialization," Wozniak said of the early days of pollution on the Fox.

Pollution on the Fox did not go unnoticed by local and state agencies.

In 1927, the state sponsored its first modern scientific survey of rivers and streams. The survey was undertaken after a 1925 incident in north

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## Pollution: 'Everyone dumped their wastes'

western Wisconsin in which a pulp mill discharge killed 25 to 30 tons of fish.

A report on the survey documented the role of dissolved oxygen in the Fox and noted that fish could not survive in many parts of the lower Fox for periods of the year because of the lack of dissolved oxygen in the water.

The 1927 report played a role in the state's authorization that year of regional sewerage systems with taxing powers and the creation of the state Committee on Water Pollution. In 1967, the committee was organized into the present-day Department of Natural Resources.

Additional studies followed in the 1930s to examine the problem of fish kills. By then, a local chapter of a national conservation advocacy group, known as the Izaak Walton League, formed. A number of members of the local chapter were from the Fox Cities, and they pushed for ways to stop the pollution problem.

Wozniak said pulp mills became involved in the pollution debate in earnest in 1939.

The paper industry examined ways to capture and use wastes that normally were discharged into the water. The industry also created and funded the Sulphite Pulp Manufacturers Research League, whose major research goal was to identify ways to recover and reuse waste materials that were being discharged into the Fox and the Wisconsin rivers.

Wozniak said the first significant cleanup occurred in the 1950s. Before that, the cleanup efforts were more of a "token" nature, he said.

In 1949, the Committee on Water Pollution, issued an order calling for the installation of wastewater treatment facilities by municipalities and paper mills on the Fox River by 1951. The conservationists considered the order a "significant victory," according to Wozniak.

Some industrial and municipal sewage treatment plants made efforts to comply with the order, but delays occurred. The interpretation of the order was that continued good-faith progress needed to be shown to the committee. Hearings in later years addressed progress by specific industrial and municipal plants and attention was focused on the still-declining ecological conditions, Wozniak said.

While adequate levels of dissolved oxygen in the lower Fox were not immediately restored, the pollution controls used by the paper industry advanced the technological knowledge base and raised the national political agenda on the environment, according to Wozniak.

"In addition, the efforts raised local public awareness about water quality issues," he said.

Water quality suitable for fish survival was not restored until the late 1970s and the 1980s, following implementation of the standards set by the 1972 Clean Water Act passed by Congress. The law required pulp and paper mills, as well as other industrial and municipal treatment plants, to meet minimum levels of pollution control.

By 1987, more than \$300 million in water pollution controls was invested by Fox River dischargers, Wozniak said.

"As a result of these investments, dissolved oxy-



According to **PAUL WOZNIAK**, a De Pere resident who is the research director of the Fox/Wolf Rivers Environmental History Project:

**While adequate levels of dissolved oxygen in the lower Fox were not immediately restored, the pollution controls used by the paper industry advanced the technological knowledge base and raised the national political agenda on the environment.**

gen levels increased in the lower Fox and East rivers, and many species of fish and other aquatic organisms returned from the cleaner waters of Green Bay. With them returned recreational boaters and fishing enthusiasts and greater public and private investment in waterfront properties," Wozniak wrote in a 1996 paper.

F.H. "Pat" Schraufnagel, a retired DNR employee from Madison, said the Fox made "tremendous strides" in the 1970s and '80s in pollution abatement, largely in the area of addressing the extreme-

ly low levels of dissolved oxygen in the waterway.

Schraufnagel began his career in 1950 by being named to the Committee on Water Pollution. He became the director for the bureau of standards and surveys, and became very familiar with the problems of the lower Fox during his long career.

"The biggest challenges (in the '50s) were in identifying contaminants," he said. "We never did have a handle on the PCBs and the mercury and the pesticides until testing devices (were developed)."

"It was a tremendous problem," Schraufnagel said of the lower Fox. "That and the Wisconsin River. It was pretty near overwhelming to think of it."

The problem on the lower Fox back in the 1950s and early 1960s was the relative lack of technology to address the pollution concerns. "The problem was, what can you do about it? There were no real treatment methods for paper mill waste at that time," said Schraufnagel.

Adding to the problem were the sewage treatment plants, which were equipped to handle primary levels of treatment, but not secondary forms of treatment.

But the situation improved in the 1970s and '80s, he said. Schraufnagel noticed that production of pulp and paper mills had improved dramatically from earlier years, and stream flows and water temperatures were similar to past levels — but the dissolved oxygen levels had improved vastly.

"To me, there was improvement in the Fox River," he said.

Len Montie, another former DNR official who devoted much of his attention to pollution on the Fox, said the situation improved greatly after wasteload allocations were put into practice and treatment plants upgraded their capabilities.

When the water quality on the Fox was at its poorest level, business and recreation also suffered, he said.

"I'm sure that happened. People wouldn't find the lower Fox attractive for recreational boating or swimming or water skiing."

The Clean Water Act of 1972 was a key factor in producing dramatic results on improving the lower Fox and making it habitable for a variety of fish, he said.

"We're at the point now where you can catch walleyes beneath the De Pere dam," he said. "That was never dreamed of back in the 1950s."

Bruce Baker, deputy administrator for the water division of the DNR, said paper mills went beyond technological requirements and worked cooperatively with other agencies involved in the cleanup effort in the 1970s and '80s.

Baker added that much work was done in the 1950s in response to the obvious pollution problem on the Fox.

"It's been a management challenge for decades," he said, pointing out that officials had to deal with high concentrations of waste from paper mills, pollution from municipal sources, urban runoff and non-point pollution.

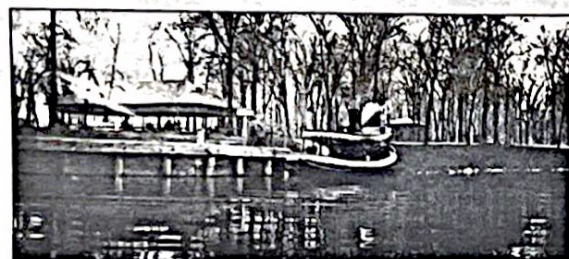
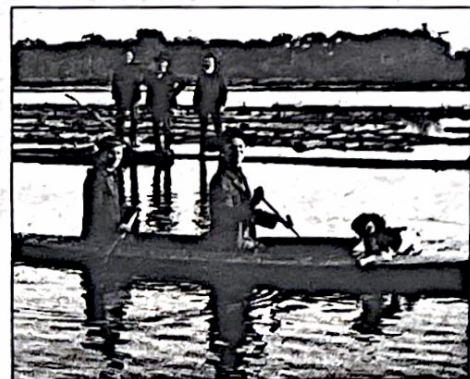
"These are not issues that are done overnight," said Baker.



# Fox River timeline



Post-Crescent photo by Dan Powers



**1634:** French explorer Jean Nicolet "discovers" the Fox River.  
**1669:** Father Claude Allouez arrives, establishes first permanent white settlement.  
**1673:** Jacques Marquette and Louis Joliet travel the Fox, exploring state's heartland.  
**1835:** Hippolyte Grignon builds Appleton's first settlement, a trading post and home known as the White Heron. It's located near present-day Alicia Park near a waterfall on the Fox known as Grand Chute.  
**1836:** Wisconsin Territory created.  
**1836:** Treaty of the Cedars opened the Fox River Valley to white settlement.  
**1837:** Grignon Mansion in Kaukauna built by Charles Grignon as a wedding gift to his wife.  
**1848:** Wisconsin becomes a state.  
**1853:** First paper mill on the Fox, Richmond Mill, begins operation in Appleton.  
**1854:** First tugboat steamer begins towing logs on Fox to sawmills.  
**1856:** Canal system for upper and lower Fox is completed. The Aquila becomes the first steamship to go from the Mississippi River to Green Bay.  
**1865:** First paper mill in Neenah, Neenah Paper Mill, begins operations.  
**1872:** Kimberly-Clark Globe Mill opens.  
**1872:** Fox River locks system transferred to federal con-

trol.  
**1880:** Development of Keller groundwood process, using trees to make paper.  
**1882:** Powered by hydroelectricity, the lights go on at Hearststone.  
**1883:** Oscar Thilmany established Thilmany Pulp & Paper in Kaukauna.  
**1886:** Electric trolley car, powered by hydroelectricity, rolls through the streets of Appleton, the first of its kind in the world.  
**1889:** Kimberly-Clark builds paper mill on Fox leading to the formation of the Village of Kimberly.  
**1929:** PCBs are first synthesized in a laboratory, creating a new class of molecules that did not previously exist on earth. Three years later, DDT is first synthesized.  
**1945:** Post-war chemical industry is born, leading to widespread use of pesticides and herbicides.  
**1953:** Wisconsin becomes the nation's leading paper-producing state, overtaking Michigan.  
**1954:** PCBs first used in the commercial manufacture of carbonless paper, in Appleton.  
**1959:** Fox is no longer used for commercial shipping.  
**1962:** Locks on upper Fox River transferred from federal control to state.  
**1962:** Rachel Carson publishes "A Silent Spring," creating public awareness of chemical poisons in the environment.  
**1967:** The Department of Natural Resources is created in a reorganization of the executive branch of Wisconsin government. The agency is formed by combining the Department of Resource Development and the Conservation Department.  
**1970:** The Environmental Protection Agency is created by executive order of President Richard Nixon.  
**1970:** Scientists trace reproductive problems in Lake Michigan's fish-eating birds to high levels of PCBs in the fish



Post-Crescent photo by Dan Powers

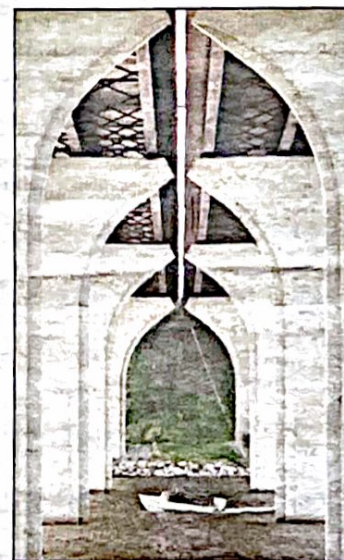


Post-Crescent photo by Mike De Sisti

they consume.

**1971:** Paper mills on the Fox River discontinue the use of PCBs in response to concerns about their safety.  
**1971:** Congress passes Clean Water Act.  
**1972:** Restrictions are placed on the use of PCBs, banning applications "open to the environment."  
**1974:** DNR issued first discharge permits under the Wisconsin Pollution Discharge Elimination System.  
**1976:** The Toxic Substances Control Act, approved by Congress and signed into law by President Gerald Ford, called for a complete ban on the use and manufacturing of the industrial compound known as polychlorinated biphenyls, or PCBs.  
**1978:** PCB-contaminated dredgings from Green Bay's shipping canal are dumped in Kidney Island, now known as Renard Island.  
**1980:** With the signature of President Jimmy Carter, Superfund is born.  
**1983:** Legislature creates Fox River Management Commission to oversee locks system.  
**1985:** After a decade-long battle with local environmentalists, the state drops its proposal to expand Kidney Island for more PCB dredgings.  
**1987:** Invasion of the sea lamprey forces closure of Rapid Croche lock south of Wrightstown.  
**1989:** U.S. Fish & Wildlife Service approaches state DNR about taking legal action against paper companies that discharged PCBs. The state declines, favoring a cooperative approach with industry.  
**1992:** The DNR forms the Fox River Coalition to manage a cleanup of the Fox River. It is a partnership made up of the DNR, paper companies that discharged PCBs and Fox Valley municipalities with wastewater treatment plants.  
**1994:** P.H. Glatfelter, Fort Howard (now Fort James Corp.), Wisconsin Tissue Mills, Riverside Paper Corp. and U.S. Paper Mills Corp. are identified by the federal government as potentially responsible parties for PCB contamination.

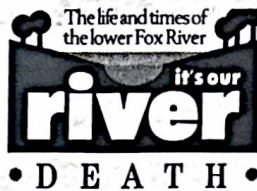
*While the flowing waters of the Fox River have passed through centuries of discovery and development, the river remains the lifeblood for Valley residents, providing jobs, recreation and an indelible identification of our slice of the world*



Post-Crescent photo by Dan Powers

**1996:** Appleton Papers and NCR, a former owner of Appleton Papers, join the five recycling mills who united in 1994 and together the seven companies form the Fox River Group.  
**1997:** The Fox River Group signs an agreement with the state Department of Justice, providing \$10 million for a pilot or demonstration dredging project, with of that money earmarked for wetland restoration and nature center improvements. The DNR says the \$10 million is a downpayment on a river cleanup.  
**1997:** The Fox River Coalition holds its last meeting.  
**1997:** Six governmental partners sign an agreement on the management of the Fox River cleanup, with the state DNR taking the lead role. The partners are the state Department of Natural Resources, the U.S. Environmental Protection Agency, the U.S. Fish & Wildlife Service, the National Oceanic & Atmospheric Administration, and the Oneida and Menominee tribes.  
**1998:** EPA announces that it is considering the lower Fox for its National Priority Listing as a Superfund site.

Timeline compiled by  
**Ed Culhane**  
 Post-Crescent staff writer



## FOX RIVER FISH SUPPLY

# Early fish advocates deemed 'zealots' for challenging river mills

By Ben Jones  
Post-Crescent staff writer

**I**n the early morning sun, Bill Verheyen used to watch the river die. Most types of fish, from wall-eye to northern pike, were already extinguished from the Fox's oxygen-starved waters. Only the rugged bullhead survived.

"When I looked up-stream, I could see hundreds coming up to the surface, gasping for oxygen," Verheyen, 87, De Pere said. "They were the last to go."

By the 1940s, Fox River fish were alive only in fishermen's memories.

Sulfide liquor, a substance once discharged in unchecked amounts by pulp mills, depleted oxygen in the water, causing massive fish kills.

"There weren't any fish at all in the river, except a few carp coming up to surface," said Art Kaftan, 85, De Pere.

As an attorney in the late 1940s, Kaftan became one of the area's first clean-water advocates.

Kaftan joined a group of young Green Bay attorneys in reviving an Izaak Walton League Chapter, an organization that promotes a clean environment.

"The whole issue for us was oxygen," Kaftan said. "We didn't know a thing about the toxins we hear of today."

The group approached Gov. Oscar Rennebohm in the fall of 1948. He arranged hearings of the

Committee on Water Pollution. In December 1948, hearings began in a packed Brown County courthouse. Kaftan and other attorneys used the forum to challenge pulp industry representatives.

Kaftan said many didn't appreciate his group's activism.

"It was the first time anybody sassed the mills," Kaftan said. "Mills were the predominant thing here, so we were called zealots. People thought we were nuts."

"Some people still think that."

Kaftan said the group faced considerable opposition from paper mills on the river.

He said some mills got employees to turn against the cleanup, because they were fearful of losing jobs.

"They had a motto," Kaftan said. "Fish or factories. Do you want fish or do you want factories? Forget the quality of the river, it's fish or factories."

The hearings lasted two weeks, concluding in January 1949.

Out of the forum came the first pollution legislation that addressed the river's problems.

The group encouraged Kaftan's younger brother Fred to run for state Senate.

"Those of us that managed his campaign pushed on the idea that this was the big issue he was going to get elected on," he said.

In office, Fred Kaftan sponsored the first pollution legislation that addressed river problems.

"It was very strenuous," his elder brother said. "It had to do with outlawing the right to throw any pollutinary crap in the river."

The legislative proposals included a fine that would be assessed to mills each day they pollute

the river.

Kaftan said the legislation sparked a lengthy debate.

He added the legislation that ultimately passed was a watered-down version of his brother's firm environmental stance.

But, it included funding for a secretary and staff for the Committee on Water Pollution.

He said the debate also raised public awareness about river pollution.

"We were successful attracting attention to the river's problems," Kaftan said. "I am proud of that."

Over the decades, the Izaak Walton League continued, gaining members like Verheyen.

More legislation standards followed, including the passage of the 1972 Clean Water Act. In the late 1970s, fish began returning to the river.

Many early activists, like Green Bay attorney Virgil Muench, are dead. Others, like Kaftan, are in their 80s.

Kaftan, lives on a shaded De Pere street a few blocks away from the Fox.

He hasn't practiced law for 15 years, but hasn't forgotten the environment.

He continues to make donations to environmental groups and causes.

While Kaftan has witnessed fish return to the river, he is not sure of victory.

"You could say we were victorious, because we got oxygen in the water," Kaftan said.

"But the water below the dam is filled with wall-eye and peplethere are now warned not to eat them."

"I think it's very sad."

## FOX RIVER POLLUTION

# Post-World War II movement forced businesses, cities to clean up messy river

By Nathan Orme  
Post-Crescent staff writer

The cities and businesses that depended on the Fox River were slowly draining their own lifeblood.

"The cities and industries turned their backsides on what made them," said John Brogan, member of the Department of Natural Resources board from 1975 to 1987.

For most of the middle of this century, the Fox River was dead with pollution. It was a slow-moving trail of sludge.

After World War II, Brogan said, a movement

began in Green Bay to force businesses and cities to clean up the mess. People were upset about the deterioration of fishing and closure of the beaches, he said. The Izaak Walton League, a national group dedicated to the preservation of America's wetlands and waterways, held hearings and there was a lot of finger-pointing.

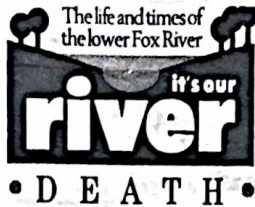
Brogan, a career stockbroker and banker in Green Bay, would himself later become an active member of the league because of a concern for the environment sparked when he worked on the 1958 gubernatorial campaign of then Wisconsin state Sen. Gaylord Nelson. Brogan's interest in the envi-

ronment culminated in his appointment to the Natural Resources Board as a player in the efforts to stop the pollution of the Fox River.

At the same time as these hearings, some local paper mills took out full-page ads in area newspapers posing the question, "What do you want, fish or factories?" The implication was that there could be one, but not the other.

Early state efforts, Brogan said, were based on the English common law philosophy of no one shall "befoul the green." Pollution was a "public"

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## FOX RIVER POLLUTION

# Successful cleanup effort literally brought lower Fox back from the dead

By Andy Thompson  
Post-Crescent staff writer

**H**arry Lopas remembers the days when the Lower Fox River resembled an open sewer.

"There was nothing in there but carp and sludge worms," said the 88-year-old Menasha resident, who has devoted much of his life to conservation efforts on Fox Valley waterways.

Lopas vividly recalls the condition of the area rivers and lakes dating back to the 1940s.

Waterways were plagued by the dumping of industrial waste, household waste and municipal waste. Dead fish floated in the river. Rubbish and old shoes dotted the waterways. And the pollution caused serious harm to a resource that Lopas cherished.

"People didn't know (about the impact of pollution), I guess," said Lopas, who has been a champion of environmental causes for more than half a century.

The condition of the Fox improved dramatically in the 1970s and '80s as a successful cleanup effort focused on improved forms of wastewater treatment and on revisions in the amount of waste that was put into the river.

But historians say there were times before the cleanup that the pollution was so severe that portions of the lower Fox were virtually dead.

Fox River historian Paul Wozniak of De Pere said pollution plagued the river dating back to the 1920s and persisted in various forms beyond the '60s. Portions of the lower Fox — including an area north of Appleton and a region between Kaukauna and De Pere — were incredibly bad during periods over the years, he said.

In some respects, the Lower Fox was an eyesore, according to Wozniak.

"There was a fair amount of denial that the public had," he said. "It was too ugly to look at."

During the peak pollution times, houses were built away from the river and the stench was nearly overwhelming.

"There was a pig-sty smell to much of the river," said Wozniak.

In the Appleton and Neenah-Menasha areas decades ago, the fish took on the color of the various dyes that were dumped in the Fox.

"You'd cut them open and they'd be colored," said Wozniak.

In the Green Bay area, where the lower Fox and the East River join just before entering the bay of Green Bay, a 1920s report by a local business committee indicated that the river smelled "terrible."

In 1933, the smell was so bad that Green Bay's

East High School was required to regularly hold classes with windows closed.

Wozniak said industries along the East River converted logs into pulp, milk into cheese products, cows into cuts of meat, and malt and barley into beer. In addition, vegetables were cooked and packaged into cans and fish packing plants trimmed and cleaned fish caught on Green Bay.

They were among the industries that discharged wastes into the nearest stream with little or no treatment. The problem was compounded by the dumping of individual, non-business waste such as engine oils, household garbage, appliances and worn-out boats and cars.

In the late 1920s and early '30s, many homes had pipes that flushed raw waste into the river, and the presence of human waste was recognized as a threat to spreading disease.

Wozniak said that despite the conditions in the river, children swam in the waters of the East River and the lower Fox in what were likely the most filthy stretches.



**"People didn't know (about the impact of pollution), I guess. There was a fair amount of denial that the public had. It was too ugly to look at. There was a pig-sty smell to much of the river."**

HARRY LOPAS, 88, a Menasha resident and environmentalist

The pollution problem on the East River was severe.

In 1927, a Green Bay City Council committee joined a business association for a boat ride down the lower stretches of the river. A subsequent report indicated that the river was "more in the line of an open sewer" and that "the only movement of water was from the boat or the eruptions of gases in the bottom of the river, which would shoot to the top solids of sewerage matter."

The report added that when the group reached the mouth of the East River where it enters the Fox River, they found that oil and gas had been pumped into the water. "It is so bad that we touched a match to it and it ignited and threw a flame two feet high," the committee reported.

Wozniak said that although the Fox River differed from the East River by the larger size of its flow, the type of waste dumped into it was not substantially different.

"Sordid conditions were reported on the lower Fox River from Lake Winnebago to the bay of Green Bay," he said. "Although the degree of the stench and concentration of the pollution in most of the Fox was reported to be less severe than in

the East River, pollution was a recognized problem."

Fish kills occurred along the lower Fox during the years when the level of dissolved oxygen was so low that little could survive.

One such kill happened in the summer of 1937, when "wagon loads" of perch, musky, pike and 32 other species were collected between Appleton and Kimberly. And in 1950, fishermen lifted tons of dead fish from nets 36 miles from the mouth of the Fox.

A retired state Department of Natural Resources official, Len Montie, said some stretches of the river were virtually dead before major anti-pollution advances were made in the '70s and '80s.

In the area where the Fox and the East rivers joined Green Bay, "it was so bad in the summer that you would find that there would be floating clumps of sludge that would be released from the bottom," he said.

"It was very unpleasant," said Montie.

Bruce Baker, a DNR official who remembers the condition of the river back in the '70s, said there were portions with only carp and no aquatic life because of the low oxygen levels.

"Anybody who lived up there will give you a description," he said. "There were places where there were clearly wood fibers floating in the river. There was a lot of visible pollution that people could look at and say it was terrible."

Dale Patterson, chief of the DNR's water-quality modeling section, said the improvements that began to appear in 1974 on the Fox have had a positive impact on the Valley.

"I think the Fox River is really what makes the Fox Valley the Fox Valley," he said. "It is the center for industry, it is the center for culture. In many ways, people identify with the river."

Patterson said shores and frontages along the Lower Fox were not being developed before the cleanup that began in the '70s.

"Today, that's completely turned around," he said, adding that large homes are now being built along the Fox.

"They must be comfortable that the river is a good resource and is not an eyesore."

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# Cleanup: Movement prodded businesses, cities

nuisance," Brogan said, but nothing more.

In the late 1940s, the state Legislature set up a state committee on water pollution to try to start doing something about the river. The problem, Brogan said, was that this board did not have much power.

"It was a very toothless operation," Brogan said. "There were sporadic attempts to do finger-pointing and to improve waste management at the municipal level. Municipalities by and large sat around and waited for federal grants."

The most it could do, he said, was clean the dead fish from the top of the water and send the bill to whichever party it felt was responsible. Eventually, the pollution board was folded into the Resource Planning Agency, which later merged with the state Conservation Department to form the Department of Natural Resources.

The committee did order cities to treat water with chlorinators, according to a *Post-Crescent* article published Sept. 14, 1950. Cities had a difficult time implementing this order, according to the article, because standards had not been set telling them how much chlorine to use.

But the cities weren't doing much on their own, either. Most of them took no action to help clean the dying river. Dale Patterson, chief of the water quality modeling section at the Bureau of Watershed Management in Madison said, there was some primary wastewater treatment, which means that "rapidly settling solids" were filtered out of the water.

Officials would not build any sewage treatment facilities unless most of the money came from the federal government, Brogan said.

The only money coming from Washington was a piece of New Deal legislation that only addressed sewage treatment, not industrial or other forms of pollution.

A few municipalities built trickling basins, which Patterson described as a bed of rocks where water would trickle down at a slow rate, allowing bacteria to grow. In its natural growth process, the bacteria would consume the biochemical oxygen demand pollutants and then excrete water and carbon dioxide.

Trickling basins were not very effective, Patterson said. A major problem occurred when "fouling," or loss of oxygen, killed the aerobic - or oxygen-consuming - bacteria. Conditions were then only adequate for anaerobic - or oxygen-free - bacterial growth, but anaerobic bacteria were not good biochemical oxygen demand consumers.

Even if a city did have one of these pollution catchers, it was usually overloaded and generally inadequate for the amount of pollution that was being dumped into the river.

A few paper mills had primary wastewater treatment before the Clean Water Act passed in 1972. According to a June 28, 1961, article in *The Post-Crescent*, the Appleton Division of Consolidated Water Power and Paper Co. had built collection devices to reduce the amount of sulfide solids going into the river by 15 tons per day.

But it was "more the exception than the rule" for



Post-Crescent file photo by Dan Powers

mills to have any significant wastewater treatment, Patterson said.

He described two types of "save-all" primary treatment methods used by some mills to capture paper fibers before they made it into the river. One method was a simple filtration screen meant to capture free-floating fibers.

The second was an air-flotation process, in which air was bubbled up through the wastewater. The air bubbles would catch the fibers and bring them to the surface where they could be skimmed off.

"Neither method was particularly efficient," Patterson said. "It would only catch about 30 percent of the fibers in the water."

Problems that still persist today were hindering cleanup even then. Cities and municipalities were not working together to control pollution.

In 1969, William Sayles, an official with the state pollution control committee, suggested that cities and industries pool resources to fight pollution. Working independently showed their intentions were in the right place, but would be ineffective in accomplishing any acceptable standard,

**A few paper mills had primary wastewater treatment before the Clean Water Act passed in 1972. According to a June 28, 1961, article in *The Post-Crescent*, the Appleton Division of Consolidated Water Power and Paper Co. had built collection devices to reduce the amount of sulfide solids going into the river by 15 tons per day. But it was "more the exception than the rule" for mills to have any significant wastewater treatment, according to Dale Patterson, chief of the water quality modeling section at the Bureau of Watershed Management.**

Sayles said in a Nov. 9, 1969 *Post-Crescent* article.

By working together, there could be better aeration systems to replace oxygen in the water.

Sayles also suggested forming a Fox River Association to which pollution dischargers would pay a toll based on the amount of waste dumped.

This tax would help pay for equipment to measure pollution levels that could be connected to a master computer and communications system.

Unfortunately, Sayles was speaking to an empty room. *The Post-Crescent* reported two years later that the public heart wasn't in the Fox River cause. Ed Casper, a bottled gas distributor from Chilton, reportedly wrote letters to every high-level state and federal representative from Wisconsin asking them to recommend the Fox as the site for an Environmental Protection Agency river cleaning demonstration and he encouraged others to do the same.

Only 50 other residents wrote letters, the article said, and the legislators were just as bad. "Their lack of response is notorious," Sayles told *The P.C.* "The total Fox River-Wolf River watershed will be cleaned up when the people want it cleaned."

## FOX RIVER'S HISTORY OF PCBs

# An enterprising salesman's phone call 45 years ago brought PCBs to the Valley

By Ed Culhane

Post-Crescent staff writer

**I**t was an enterprising salesman, looking for ways to save an inventive but endangered paper mill, who made the phone call 45 years ago — the call that brought PCBs to the Fox Valley.

That call, in 1953, resulted in an economic boom that lasted four decades, bringing billions of dollars to the Fox Cities.

The salesman, Paul Trettschel of Appleton Papers Co., could not have guessed at the other side of that coin — an insidious form of

pollution, harmful to animals and a threat to humans, so persistent that it can last for centuries.

The Appleton Coated Paper Co. was formed in 1907 by Charles S. Boyd, a man of whose self-discipline was legendary. Concerned that his family might be predisposed to the excessive use of alcohol, he waited until he was in his 50s to take his first sip.

By the turn of the century, papermaking was already an established industry in the Fox Valley, and even then, it took a great deal of money to open a new mill. Boyd, intent on forming his own business, lacked that kind of capital.

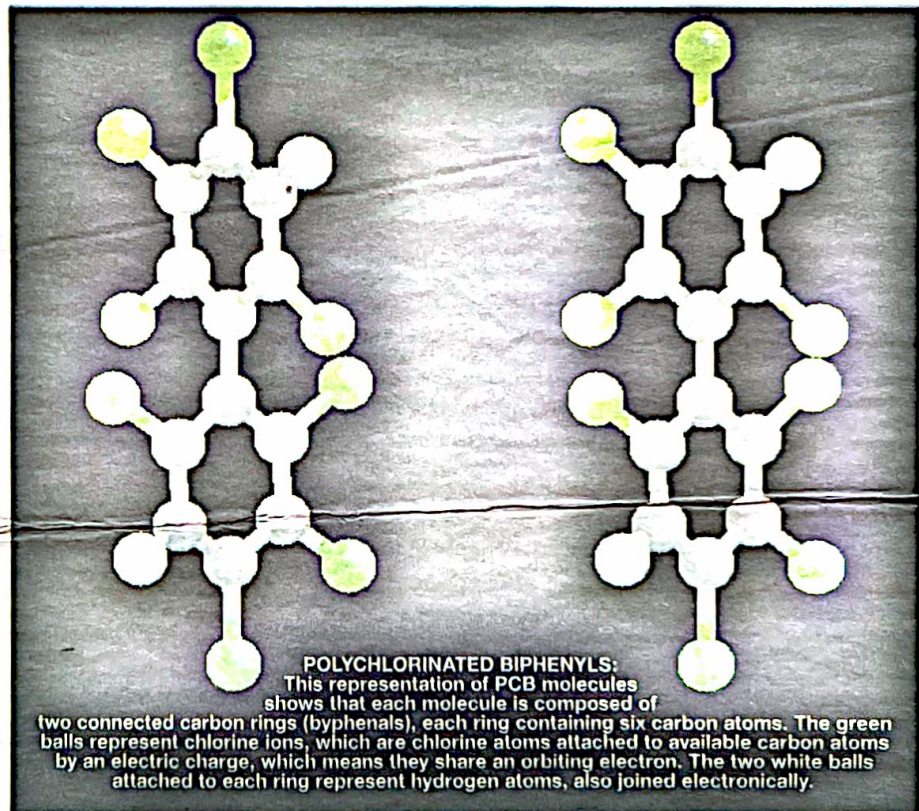
His genius was in creating opportunities. Boyd did not make paper, he improved it. His costs were lower than those faced by the big paper mills, his margin of profit higher.

Working in a small, rented, wooden building, Boyd's laborers would mix pigments such as kaolin clay with calcium carbonate and water inside used oil barrels. Casein, a mild protein adhesive, was added to bind the coating to the base paper. The wet paper was dried by "festooning" it over steam coils.

The young company coated paper that was manufactured by nearby mills so that the surface was smoother and more receptive of the printer's art. As the technology of printing advanced early in the century, so did the techniques applied by Boyd's skilled laborers, and the company's reputation grew as a reliable provider of high quality, coated paper.

By the 1920s, the Appleton company was producing its own brands of commercial paper, creating one of the first sheets of bond paper, coated on one side, that was designed not only for printing, but also for the emerging graphic arts of the era, found in the four-page or illustrated letter, a major new form of advertising.

The company then led the development of brilliant, high-gloss coated colored papers, and when those markets tightened, moved on to create duplex papers, deeply colored on one side with a lighter, harmonizing color on the other, a product



that allowed printers to produce three color advertisements with a single run through the press.

And so it went, through various ups and downs, until the early 1950s when the company was doing a brisk business manufacturing the white-coated Litho Labels for packages of Lucky Strike, Pall Mall and Chesterfield cigarettes. These accounts represented half the Appleton Papers' production.

But the company was falling victim in the market to its own advancements. Large paper producers learned to coat paper on the paper machine, eliminating the need for a second run, and they came after Appleton's markets.

"In a sense, Appleton was a proving ground to work out the problems of select coated papers, only to lose the business when it reached high volumes to the integrated, lower cost manufacturer," wrote retired chief executive officer Tom Busch in his 1986 book "Adding Value to Paper: A 90 Year History of applying coatings to paper at Appleton Papers Inc."

Then came a stroke of good fortune, which Appleton Papers was poised to exploit. The giant business machine company, NCR, had been working for more than 15 years on a new technology that would replace ink printing ribbons in cash registers and the one-time carbon tissue found between the pages of sales books.

As early as 1939, NCR had discovered the means to produce a colorless dye that when mixed with a solid absorbent switched to an intense, stable color.

In the 1940s, NCR researcher Barrett K. Green invented a paper coated on the back with a colorless dye, suspended in an emulsion, that would produce images where it was pressed against a second paper, coated on the front with the absorbent material.

But the emulsion had a short shelf life, and colors would bleed into the paper. Paper mills that

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# PCBs: Odd events brought pollutant to Valley

had run tests on the product lost interest in developing large-scale production.

Then in 1952, Green invented the micro-encapsulation of colorless dyes, dyes suspended in a stable, heat-resistant solvent, manufactured by Monsanto, called Aroclor, otherwise known as PCBs.

The technology is interesting. The water-like dyes resist mixing with the oily solvent. But when mixed with extremely high agitation, they would join, and the solvent would separate into tiny beads. At that point, gelatin is added, the pH is suddenly shifted, and the gelatin wraps around the solvent beads, coating and sealing them.

The micro-capsules, while they would break under the pressure of a pen tip, were tough enough to survive the hot paper coating process and to squeeze through nips on the paper machine without bursting.

But NCR needed a coating mill willing to take on the challenge of bringing this science into production, and it was then that Trettschel (soon to become vice-president of sales) called and offered the services of Appleton Papers' research and development team, one of the few in the country with the skill and equipment to handle the new emulsion.

Appleton Papers had already perfected the use of the air knife coater, which could spread a thin, even layer of coating on paper without bruising it.

Still, working out the technical problems was tricky. It involved rethinking the whole coating and handling process, to reduce and eliminate the pressures that caused discoloration.

Within a year, the Appleton company succeeded, and in 1954, NCR hit the market with a new product whose potential was vast. The new carbonless paper replaced the ubiquitous carbon ribbon and sheets with carbonless paper, a better, more convenient, more reliable product that cost less money.

"From a technological standpoint, the invention of carbonless paper was the most significant invention in the industry up until that time," said Dennis Hultgren, manager of environmental affairs for Appleton Papers.

In the meantime, NCR used what it learned in Appleton and contracted with the Mead Paper Co. of Chillicothe, Ohio, for the same manufacturing services. By creating competition, NCR kept prices down. Mead, a paper producer, should have been able to undercut Appleton's price, but was not able to do so.

Retired Appleton Papers researcher Don Churchill said company executives and workers had a genius for controlling costs.

During the nearly two decades that PCBs were used in carbonless paper, Appleton Papers was able to achieve 67 percent of NCR's national carbonless paper production.

"Carbonless copy paper production increased nearly exponentially during the '50s and '60s,"



**"We knew there was a problem but we thought we solved it. We got out of it. It was out of sight, out of mind. We didn't know the consequences of it."**

**DENNIS HULTGREN, manager of environmental affairs for Appleton Papers**

wrote Dale Patterson of the state Department of Natural Resources in a recent report on PCB discharges.

Busch described those years as "momentous" for Appleton Papers.

"By the year 1960," Busch wrote, "the NCR carbonless paper tonnage rose to one-third of Appleton's production and one-half the operating income."

By 1971, Patterson wrote in his report, 7.5 percent of all office forms produced up until that time were manufactured on carbonless paper, and Appleton Papers had most of that business. Profits soared.

In the meantime, PCBs were regularly washed off equipment at Appleton Papers and sent along in discharge water to Appleton's wastewater treatment plant, which passed tens of thousands of pounds of them into the Fox River.

Larger quantities of PCBs were discharged into the river by other area mills that purchased the paper scraps from Appleton Papers' manufacturing process, as when sheets are cut to size. That paper, heavily imbued with PCBs, was washed to

remove the ink and the PCBs were discharged in the waste stream.

It was then that the company learned of a scientific investigation that had linked PCBs to a crash in Michigan's domestic mink population. High quantities of PCBs were found in ground fish carcasses used to manufacture mink food.

Other researchers found PCB concentrations of up to 100 parts per million in the bodies of cormorants whose chicks were born with twisted beaks, a fatal deformity.

"We knew as fast as anyone else," Hultgren said of the alarm that went out on PCBs, "and it didn't take us long to act once we found out. We switched as fast as we could. We didn't want to use an unsafe product, so we stopped using it."

By then, industry scientists had learned to use other solvents in the emulsion, solvents that were not chlorinated, allowing the manufacture of carbonless paper to continue.

The substitutes didn't work as well, but they worked well enough.

In time, they would be refined to match the quality once offered by PCBs.

Six years after Appleton Papers stopped using PCBs, the federal government banned their production entirely.

At first, it was thought that the end of PCB discharges would solve the problem, that they would continue to become diluted in the environment until they no longer posed a threat.

"We knew there was a problem but we thought we solved it," Hultgren said. "We got out of it. It was out of sight, out of mind. We didn't know the consequences of it."

But dilution didn't work.

Instead, tons of these chemicals still cling to sediments in the river, and the sediments slowly release them, and they enter the food chain, and their concentrations increase as they move up the food chain.

The sediments in the Fox River have been identified as the single largest source of chemical pollution to Green Bay and Lake Michigan. They have become a source of continuing pollution that scientists say will last for centuries if something isn't done.

Industry officials joined the DNR in investigating the problem, but it wasn't until the U.S. Fish & Wildlife Service began a Natural Resources Damage Assessment in 1994 that paper industry officials began to understand the scope of their liability.

They began to understand that the cleanup bill, depending on the technologies used, could range from \$250 million to \$2.5 billion.

It wasn't until 1996 that executives with Appleton Papers alerted shareholders that a large environmental liability existed.

"Before that, it was never on our radar screen that this could bankrupt us," Hultgren said.

## FOX RIVER POLLUTION

# Evolution of man-made chemicals brought a host of new concerns to the Valley

By Ed Culhane

Post-Crescent staff writer



**"When a toxic molecule enters the body, the first thing the body tries to do is get rid of it. A liver enzyme will slap a charged ion onto it to make it more water soluble, to try to flush it away through the kidney. But many of these compounds are so resistant, that defensive enzyme is not able to attach charged ions on it, and when the body can't make it more water soluble, it ends up storing it in fat."**

WARREN PORTER, a professor of zoology at the University of Wisconsin

omelets," Porter said.

Eagle populations plummeted.

It was a now deceased University of Wisconsin scientist, Joe Hickey, who in the 1950s measured DDT residue in the eggs of these birds, birds that were near the top of the food chain.

The puzzle began to unravel.

The ring shape of the DDT molecule makes it both water and fat soluble (as does the ring shape of PCBs.)

In water, it tends to be lipophilic, which means it is strongly attracted to fat cells, and it dissolves into the cell membranes of algae. Microscopic animals, zooplankton, eat the algae, tiny fish and crustaceans eat the zooplankton, larger fish eat those creatures, and they are eaten by still larger fish, and these are eaten by birds or fish-eating mam-

mals like otter and mink, or by people.

Porter said immune system of each new host will attempt to rid itself of the toxin, but in the case of persistent organic pollutants, it doesn't work.

"When a toxic molecule enters the body, the first thing the body tries to do is get rid of it. A liver enzyme will slap a charged ion onto it to make it more water soluble, to try to flush it away through the kidney. But many of these compounds are so resistant, that defensive enzyme is not able to attach charged ions on it, and when the body can't make it more water soluble, it ends up storing it in fat."

As each larger creature eats its prey, it consumes all or most of the DDT (or PCBs) ever consumed by its victim, and the fat-loving chemicals store themselves in the host's body, multiplying, ready for their next jump up the food chain.

In this manner, a process called biomagnification, concentrations in the water increase dramatically - by tens of thousands or even hundreds of thousands of times - by the time they reach top predators.

In 1962, Rachel Carson published "Silent Spring," describing the effects of DDT on wildlife. In 1972, the use of DDT was restricted in the United States, although it is used to this day to control malaria-causing insects in non-industrialized nations.

By the time the use of DDT was banned in the United States, researchers had already targeted PCBs as the cause of nest failures and deformed chicks in cormorants and nine other species of fish-eating birds in the Great Lakes.

In 1971, paper mills on the Fox River and elsewhere discontinued their use and in 1976 they were banned. There was an emerging concern, that in addition to harming wildlife, these chemicals might be linked to cancer in humans.

PCBs have been linked to deformities in wildlife, many of them gender-related, and in laboratory tests, have been shown to cause cancer in mice.

It is not known whether PCBs cause cancer in humans. The federal Department of Health and Human Services has determined that PCBs "may reasonably be anticipated to be carcinogens."

It was hoped back then that the toxins already released would fade in the environment and that concentrations in wildlife would decline.

For a time, they did.

But those declines began to taper off in the mid-1980s. Subsequent research has shown that contaminated river sediments, which hold tons of these chemicals, are slowly releasing them into the river current, into the Great Lakes and into wildlife.

State DNR officials have been issuing health advisories on PCB-contaminated fish for more than 20 years.

Without action, scientists said, many fish in these rivers and lakes will not be safe to eat on a regular basis for 100 to 200 years.

It came to light when bird populations began to crash.

But it started long before that, before World War II, as scientists were rapidly zeroing in on the basic building blocks of life.

By 1939, scientists had been recruited into the war effort and told to develop highly toxic nerve agents.

Using organochlorides like DDT, which was first synthesized in 1932, they created a new class of compounds, man-made molecules,

soluble in both fat and water, that could slip through the membranes - the defensive shields - of plants and insects and animals.

"It resulted in the development of this whole new industry," said Warren Porter, a professor of zoology at the University of Wisconsin. "They had all these scientists who knew how to make poisons."

The introduction of man-made chemicals into the environment increased exponentially with the war and the economic expansion that followed.

Porter has a photograph, part of a promotional poster created in 1945, showing a tanker truck spraying a cloud of DDT on a beach, with children in the direct path of the chemical fog.

DDT was one of the miracle products from the people in the white lab jackets. It would kill the insects, its promoters said, but not harm children.

DDT was enthusiastically sprayed across the landscape. It killed mosquitoes that carried diseases, or that were just annoying, making it a friend of mankind.

But by the 1950s, people started noticing that something was wrong. Songbirds who got too big a dose when the truck went by were going into convulsions on people's front lawns.

"That was the neurotoxic part of it," Porter said. It has to do with the way nerve impulses are transmitted.

One nerve drops off bit of chemical in the gap between it and another nerve, a different chemical messenger diffuses across, and the receptor nerve starts firing. Then another chemical, an enzyme, is produced to chop the connection.

If that "scissors" enzyme is blocked, however, the connection is never broken, and the nerve fires continuously, convulsively.

"DDT was designed to interfere with that enzyme," Porter said.

But there were less visible, less understood processes going on. Birds that otherwise appeared to be healthy were losing their ability to reproduce. Their egg shells were too thin, too brittle.

"Peregrine falcons and other prey birds were lying down on their eggs and turning them into

## PHOSPHORUS & SEDIMENT

# Hard to trace, 'nonpoint pollutants' are the primary enemies of any river

By Dan Wilson

Post-Crescent staff writer



Imagine a dump truck carrying a load of sediment and dumping it into the Fox River near Kaukauna.

Let's also imagine one truck, every hour of every day, making similar dumps.

It still wouldn't equal the amount of sediment still entering the Fox River system and finding its way into Green Bay.

Let's also imagine another truck, carrying 400 pounds of phosphorus, dumping its load every day into the same spot near

Kaukauna.

Phosphorus and sediments are the chief enemies of a river. They are also the hardest to trace.

Phosphorus is a plant nutrient that is responsible for excessive algae blooms. Algae, combined with sediment, reduces water clarity. Low water clarity limits underwater light and limits submerged aquatic vegetation.

Because sediment and phosphorus don't come from a single or identifiable source, they are known as nonpoint pollution.

According to a study by the University of Wisconsin-Green Bay Institute for Land and Water Studies, (State of the Bay, 1993) 77 percent of the phosphorus and sediment comes from nonpoint sources such as agricultural and urban runoff.

More than 100 potentially toxic substances have been identified in the water, fish and sediments of the Fox River. Many of these chemicals, such as oil and gas, heavy metals (zinc, mercury, cadmium, lead), and pesticides are washed off sidewalks, parking lots, landfills, lawns, gardens and croplands, and into nearby streams and lakes. These nonpoint source pollutants are carried downstream where they settle into the Lower Fox River and Green Bay. Toxic materials can contaminate small organisms that are eaten by fish and waterfowl. The toxins build up in their fat, leading to illness, birth defects and possibly death.

Because nonpoint pollution doesn't come through a pipe, it is not part of our environmental consciousness. It also makes it difficult to call attention to the problem.

"One of the best quotes I ever heard was that asphalt is the last crop," said Bruce Johnson, executive director of Fox-Wolf Basin 2000.

"What we are talking about is the transformation of a land cover and streams which is virtually irreversible. I haven't seen any cities being removed and parking lots and roofs going away."

Addressing nonpoint pollution is not going unnoticed at the state level. The Priority Watershed program now covers a large part of the Fox-Wolf watershed. The program provides grants and



Post-Crescent file photo by Dan Powers

**THICK MATS** of multicolored algae cover parts of Little Lake Butte des Morts in Neenah.

matching funds to enable farmers to put land conservation practices into place.

One of those is the Arrowhead River/Rat River/Daggets Creek Priority Watershed project, which covers 131 square miles in Winnebago and Outagamie counties. The watershed drains into the three lakes upriver from Lake Winnebago-Poygan, Butte des Morts and Winneconne.

The ARD project received watershed status in 1992 and set a goal of reducing phosphorus and sediment loads by 50 percent. In those six years the ARD Priority Watershed Project has entered into 200 cost sharing agreements with landowners bringing nearly 20,000 acres of land into a conservation tillage management plan and 5,545 acres into a nutrient and pest management plan.

In that same time period, 14 barnyard runoff systems and 11 manure storage structures have been built.

The ARD Priority Watershed, as have other priority watershed projects, have received a lot of support from landowners and farmers.

Recognizing the value of these programs prompted the state to add additional funding to the nonpoint pollution war. A recent budget amendment dealing with an anticipated state sur-



JOHNSON

plus earmarked an additional \$850,000 for the State's Nonpoint Source Pollution Abatement Program from the surplus.

In addition, another program on the horizon is called "Watershed-Based Trading."

Similar in scope to the air pollution credit exchange program, it would allow funds to be transferred from point sources (industry or municipal treatment facilities) to nonpoint sources (farms, construction sites etc.) in exchange for reduced discharge permit requirements.

The Fox-Wolf basin has been named one of three pilot regions in the state for a watershed-based trading program. The details of that program are still in the formative stages under the Watershed-Based Trading Task Force, charged with developing policies and procedures.

However, according to Johnson, there is still a great deal of public education that needs to be done. Nonpoint source pollution accounts for the main source of pollutants, but the focus still remains on those things people can see. Also, putting into place programs that deal with the rural sources, still leaves the urban sources untouched.

"I would love to see the same kind of fervor applied to this change in the landscape that has been applied to something like the Crandon mine," said Johnson. "Or even the PCB issue. They are both important."

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Post-Crescent photo by Mike De Si



The life and times of the lower Fox River

## SAVING THE FOX RIVER

# Father of Earth Day sparked movement to save U.S. environment and Fox River

By Nathan Orme  
Post-Crescent staff writer



In 1970, Sen. Gaylord Nelson jump started a movement to save America's environment. And with it, the Fox River.

The Wisconsin senator had been working to put the environment into the national spotlight for several years. His work started in the late 1950s as governor when he was able to get a 1-cent cigarette tax approved to raise money for the purchase of state parks and wetlands.

He persuaded President Kennedy to go on a national conservation tour in 1963 in hopes that it would raise the issue in the nation's consciousness.

That tour did not have the effect intended, Nelson said in an interview from his Washington, D.C., office, "however it was the germ of the idea that ultimately flowered into Earth Day."

The idea for Earth Day first hit Nelson in an airplane on the way to University of California-Berkeley. He was reading an article on teach-ins, which were being held all over the country in opposition to the Vietnam War. "It suddenly occurred to me, why not have a national environmental teach-in?" he said.

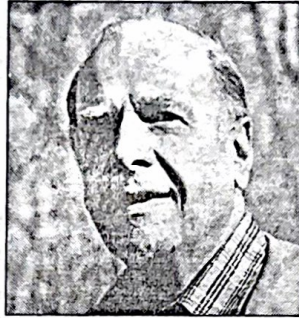
It was that idea, inspired over a newspaper and a bag of peanuts, that roused public furor over mistreatment of the environment. "It was a truly astonishing grassroots explosion," Nelson said. "The people cared, and Earth Day became the first opportunity they ever had to join in a nationwide demonstration to send a big message to the politicians — a message to tell them to wake up and do something."

Do something they did. In 1970, the Environmental Protection Agency was formed by President Nixon's executive order. Two years later, the Clean Water Act was passed by Congress, thereby giving the Fox River, which at the time was listed as one of America's 10 dirtiest rivers, according to Nelson, the shock it needed to begin bringing it back to life.

The Clean Water Act had two quality stipulations in its wording that would guide those working to heal the Fox: water quality had to be up to "best practical" standards by 1977 and "best achievable" by 1983. Using this language as a guideline, it was then up to the EPA to determine corresponding pollution levels for individual waterways.

States, in order to take over enforcement of clean water standards, had to apply for authorization from the EPA to begin issuing discharge permits to cities and industries.

The state Department of Natural Resources was charged with the task of granting permits to cities and factories wanting to discharge pollution



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SEN. GAYLORD NELSON

into the Fox River. Pollution regulation had always been within the DNR's realm of powers. The DNR was a relatively new body, having been formed in 1967.

But until the federal law, paper companies always had the option of going to another state if the state they were in decided to clamp down on pollution. With that no longer an option, the DNR could go to work enforcing environmental law, Nelson said.

In 1975, the Wisconsin Natural Resources Board was fresh with new Democratic appointees. Among them was Green Bay businessman John Brogan, a longtime environmental activist who served on the board until 1987.

The board came up with a plan to enforce the federal government's new laws. Brogan said the board's goal was to achieve "fishable/swimmable" status for the Fox River by the early 1980s.

First, they persuaded then-Gov. Pat Lucey to establish matching funds from the state for cities that put in money for pollution treatment, thereby cutting costs for the cities, who had been doing nothing about pollution largely because of the price tag, Brogan said.

Furthermore, the board decided that all municipalities that sent pollution into the Fox would get

priority in receiving federal grants toward sewage treatment. Brogan said the board focused its attention on "point-source pollution," which meant solid waste and biological oxygen depleters (BODs) dumped by cities and mills.

Based on the "best practical" and "best achievable" wastewater discharge requirements, the board decided to go with a program of "waste-load allocation." This, Brogan said, would be a system of regulating how much pollution could be dumped into the river at different times of the year based on the standards set by the CWA.

The original plan, Brogan said, was to give permits to each individual polluter. That would have been fine during the colder times of year when the water level was higher, but during the high-temperature, low-flow periods of the summer, this system would not meet federal standards; the amount of pollution would stay the same while the amount of water decreased.

To lower the amount paper mills could dispose of into the river during these times of year would have forced them to close.

So an alternate plan was devised, Brogan said. The resources board implemented a program of "joint-pool" permits. This plan consisted of breaking the river into three sections: Green Bay to the De Pere dam; Rapid Croche to Little Chute; and Neenah-Menasha to the Appleton dam. Pollution dischargers in each section would jointly be responsible for not exceeding the maximum pollution requirements in their section of the river.

Dale Patterson, chief of the water quality modeling section of the Bureau of Watershed Management in Madison, said there was much debate over how much cities would be allowed to discharge vs. how much industries would be permitted. If the total absorptive capacity of each section of the river was a pie, the squabbling was over how big of a slice each party would get.

"The size of the pie changes day to day, season to season," Patterson said.

It took some convincing, Brogan said, but eventually the mills adopted the plan. In the end, he said, paper industry officials were grateful because they saw that by any other regulating means the mills would have had to close for weeks or maybe months at a time.

Wisconsin was one of the first states to use waste-load allocation regulation. "And by God, it worked," Brogan said.

By the mid-1980s, regulation of suspended solids and BOD pollutants had brought new life to the Fox River. The fishable/swimmable goal was achieved.

But that still left what is called "nonpoint source" pollution and toxins. Nonpoint pollution includes agricultural and storm runoff, which are very difficult to manage. Regulating runoff from farms is "a painfully slow process of getting land users to commit to a process that will stop it," Brogan said.

## POLLUTION FIGHTERS

# Fox River cleanup has a rich history of innovation and technology on its side

By Andy Thompson  
Post-Crescent staff writer

**M**ake no mistake about it: The lower Fox River has serious pollution problems that will persist well into the 21st century.

But there is a historical basis to suggest that Fox Valley and Wisconsin will remain on the cutting edge of pollution abatement efforts as the cleanup of the Fox approaches.

Historians say state and local officials have demonstrated for several decades a willingness to use innovation and breakthrough technology in addressing problems associated with polluted waterways.

In addition, as far back as the 1930s, anti-pollution activists began to lobby on behalf of the river, which was in extremely poor condition at the time. Those anti-pollution efforts continue today, with the focal point being the proposed removal of PCBs from the lower Fox.

Perhaps the most shining example of a cooperative cleanup on the Fox began in the 1970s, when extremely low dissolved-oxygen levels depleted the fish population and endangered the health of the river.

Officials from various governmental agencies developed a model that included improvements in wastewater treatment facilities and limitations on wasteload allocations.

Paper mills went beyond technological requirements and worked jointly with the state in fashioning a system that greatly improved dissolved oxygen levels in the lower Fox, according to Bruce Baker, deputy administrator for the water division at the state Department of Natural Resources.

Baker said a "nationally unique" wasteload allocation model was established during the cleanup process. "You've seen a dramatic improvement on the river because of those conditions," he said.

Baker and other regulatory officials said the Clean Water Act of 1972 was a major catalyst in anti-pollution efforts on the lower Fox because it required that limits be established.

But Baker pointed out that there were pollution cleanup efforts that preceded the dramatic changes that occurred in the 1970s. "There was a lot of work that was done in the '50s on the Fox River," he said.

According to a 1997 report by the Wisconsin Policy Research Institute, there were major advances in anti-pollution efforts on the Fox.

"The cleanup of industrial and municipal discharges over the past three decades has been nothing



Post-Crescent photo by Mike De Sisti

A PAIR OF smoke stacks from the Inter Lake plant in Kimberly are reflected in the Fox River.

**"The cleanup of industrial and municipal discharges over the past three decades has been nothing short of astonishing. The water in the rivers and lakes now sustains fish and plants that could not live there 30 years ago."**

FROM A 1997 report by the Wisconsin Policy Research Institute

ing short of astonishing," the report stated. "The consequences have been rewarding. The water in the rivers and lakes now sustains fish and plants that could not live there 30 years ago.

"Toxicity is greatly reduced. In many places, water quality is greatly improved. Record numbers and sizes of walleyes, for example, gather below the dam in De Pere, visible from the bridge high above them. Lake Winnebago is a world-class walleye fishery. The water column is remarkably free from toxic materials. Even eagle nests, after an absence of a hundred years, are found above the Fox River between Appleton and De Pere."

The report stated that "enormous strides" were made in cleaning up point sources of pollution that flowed from the pipes of municipal treatment plants and industry into lakes and rivers.

"It was possible because of improved scientific understanding, improved engineering, effective regulation, massive capital investment and greatly increased operating expenditures by dischargers."

A river historian, Paul Wozniak of De Pere, said advancements were made as far back as the 1950s in terms of fighting pollution on the Lower Fox.

"Wisconsin became a leader in pollution control," he said. Wozniak said anti-pollution activists played a key role in efforts to address the problems on the lower Fox.

He cited the impact of Fred Kaftan of Green Bay, who was elected to the state Senate in 1948 after a campaign that focused on a single issue: water pollution control.

Kaftan authored several legislative proposals, one of which called for steep daily fines on parties who discharged pollutants.

Wozniak said Kaftan's major accomplishment was the appropriation of funding for a director and full-time staff for the Committee on Water Pollution. Conservationists had maintained that the committee was ineffective in enforcing existing laws and cited lack of staffing as part of the reason.

Work by Fox Valley environmental activists did not conclude with the efforts in the late 1940s, Wozniak said, adding that their contributions "remain a defining moment in the postwar conservation/environmental movement in northeastern Wisconsin."

"The resulting actions by dischargers and government helped establish the state's progressive reputation among water quality advocates," Wozniak wrote in a 1996 article on early anti-pollution efforts on the lower Fox.

"Although adequate levels of dissolved oxygen in the lower Fox River were not immediately restored, the controls advanced the national technical knowledge base and the national political agenda on the environment. In addition, the efforts raised local public awareness about water quality issues."

PROFILE: GORDON BUBOLZ

# Conservation champion ruffled feathers and made a difference for the Fox Valley

By Andy Thompson  
Post-Crescent staff writer



Gordon Bubolz was a conservationist at a time when standing up for the environment was not widely acceptable.

"Gordon stepped on some toes. What he did wasn't popular," said Harry Lopas, a Menasha environmentalist who worked with Bubolz for years to raise the awareness of water pollution problems in the Fox Valley.

"He wouldn't back down from nobody," Lopas said of Bubolz, who died in 1990 at the age of 85. "He called the lower Fox an open sewer. Certain people were against us, but they all agreed that something needed to be done."

For decades, Bubolz was a force in conservation, business and politics at the local and state levels. He had a lifelong love for the environment, and spent considerable time working on behalf of conservation programs and anti-pollution efforts.

"He was a significant player in trying to protect the Fox and Wolf rivers," said Paul Wozniak, who heads a research project into the history of the Fox and the Wolf.

"He was a big thinker."

Bubolz's conservation efforts dated back to the 1950s. Eventually, he became an outspoken advocate for cleaning up the pollution on the area's rivers. He was a former state senator, worked on regional planning commissions and organized an insurance company that evolved into Secura Insurance in Appleton.

In the 1960s, he began to assemble evidence of pollution on the Fox and Wolf and launched a campaign to raise awareness of the problem in the 1970s and beyond.

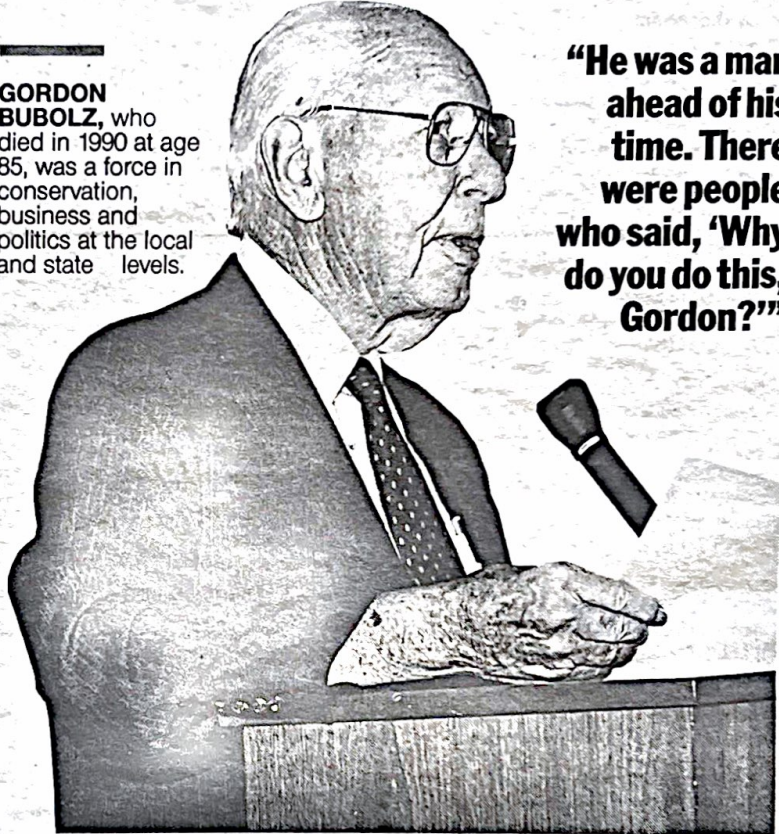
Bubolz called for an areawide attack on pollution and advocated area sewage treatment plants as a way to address the problems. He made numerous presentations to clubs and organizations in the Fox Valley, often showing slides of polluted areas in the Fox and Wolf to illustrate the need for a massive cleanup.

Bubolz pointed to instances of industrial, municipal, agricultural and residential pollution. "We need a total approach to attack the problem," he told a Neenah audience back in 1970.

He often clashed with paper mill representatives during the decades-long debate over clean water. "But we cannot condemn one segment of the community for being a polluter, because we are all polluters," Bubolz once pointed out.

G. Allen Bubolz, one of Gordon Bubolz's sons, recalled accompanying his father on some of the flights he took to examine water pollution. "It was absolutely unbelievable," said G. Allen.

**GORDON BUBOLZ**, who died in 1990 at age 85, was a force in conservation, business and politics at the local and state levels.



**"He was a man ahead of his time. There were people who said, 'Why do you do this, Gordon?'"**

The younger Bubolz remembered his father receiving "nasty" and "threatening" phone calls, media attacks and criticism from some prominent citizens during the often heated public debate over cleaning up the rivers.

"He never backed down — ever," said G. Allen. "If anything, he redoubled his efforts. He knew that he was on the right side."

Gordon Bubolz persisted in his advocacy of a river cleanup, despite the rocky road he encountered.

"He was a man ahead of his time," said G. Allen. "There were people who said, 'Why do you do this, Gordon?'"

"Dad was always a very positive guy. He would proclaim the positive potential and look with pleasure at any accomplishment. He had a set of principles that he lived by. They thought there had to be a hidden motive and there was no hidden motive."

G. Allen believes that his father would be grati-

fied with the successes that have been made in cleaning up the river to date, but would want to move forward quickly on further efforts, such as the removal of PCBs from the lower Fox.

"I would think he would be pleased at the progress that has been made, but he would be a participant in any effort to improve what we have now," said G. Allen.

Lopas was enlisted by Gordon Bubolz to be a lecturer on conservation and ecological issues dating back to the 1950s.

"If he made up his mind that it would be done, it would be done," said Lopas, 88. "He was dedicated to protecting the environment."

Lopas believes that Bubolz hasn't received enough recognition for his work on behalf of conservation and the environment.

"He was always fighting to save the environment," Lopas said of Bubolz. "We had one Gordon Bubolz years back; we're going to need 10 Gordon Bubolzes to protect what we've got."

## FOX RIVER & THE DNR

# Jumble of federal and state actions add up to today's cleanup struggles for Fox

By Cliff Miller

Post-Crescent Madison bureau



Wisconsin had been trying to keep its rivers clean for 56 years before the state Department of Natural Resources came along, and it has been 59 years since the state and the paper industry launched a cleanup effort focused on the lower Fox River.

But it took an order by President Richard Nixon in 1970, invoking a nearly forgotten 1899 act of Con-

gress, to kick-start modern-day water pollution cleanup efforts.

"Wisconsin's antipollution efforts date back to Chapter 412, Laws of 1911, when the Legislature gave the State Board of Health investigative powers in water pollution cases," according to the Wisconsin Blue Book, published by the Legislative Reference Bureau. "Prior to that, such investigations were primarily the responsibility of local government."

In 1965, the Legislature gave the authority to the 6-year-old Department of Resource Development. The DNR got the job when it was created in the 1967 reorganization of state executive branch agencies. The new agency resulted from merging the DRD with the Conservation Department.

A jumble of federal and state actions add up to today's struggles involving the federal Environmental Protection Agency, the DNR, industries, governments and residents of the Fox Valley over cleaning up PCBs and other toxic chemicals long ago deposited on the river bed. The EPA is considering whether to declare the river a Superfund cleanup site.

The federal Refuse Act of 1899 required anyone dumping waste in public waters to get permits. Nixon ordered industries and public sewerage plants to obey the long ignored act, prompting Congress to pass the 1972 Clean Water Act, the foundation for modern cleanup efforts.

Wisconsin responded by passing its own cleanup law and DNR rules and permits grew from that, said Paul Didier, retired head of DNR solid and hazardous waste management.

The 1911 pollution investigation law expanded in 1927 when the Legislature created the state Committee on Water Pollution. Didier, who began working for the state as the committee's functions were being passed to other agencies, said it was established in the aftermath of a massive fish kill on the Flambeau River in 1925.

The committee consisted of officials of the Public Service Commission and Conservation Department, the state chief engineer, sanitary engineer and state health officer. The committee investigat-



Post-Crescent file photo

**AN AERIAL** view of the Neenah-Menasha Sewage Plant in early 1980s. When the permit system was devised to carry out the 1972 Clean Water Act, each mill and municipal waste plant was given limits on discharges of suspended solids and biological agents that consume oxygen in water.

ed water pollution and issued cleanup orders. The Board of Health administered the committee.

The board's state director in 1956, Theodore Wisniewski, wrote in a Blue Book article that year, "Now 95 percent of sewage from population connected to sewers is treated."

He traced Fox River cleanup efforts to a study by the committee and the Green Bay Metropolitan Sewage District on pollution of the lower Fox, the East River and Green Bay. The findings led the industry to form the Sulphite Pulp Manufacturers Research League in 1939.

The league collected annual reports from mills along the Fox on the volume and contents of wastes being poured into the river by mills and sewage plants and the committee wrote cleanup orders on the basis of the reports.

"Wisconsin is unique in that it is the only state in the nation which conducts such a program in cooperation with its pulp and paper mills," reported Wisniewski.

Industry found ways to turn the efforts to its self-interest, devising cleanup methods that saved

or made money. Wood fiber was being dumped with other wastes but by 1956 researchers had discovered how to cut fiber waste by two-thirds. Mills found alternate uses for the waste sulphite liquor, making synthetic vanillin for cooking and spreading waste materials as a surface conditioner and dust control agent on roads and on farm fields.

Didier said a turning point came with the switch from issuing after-the-fact cleanup orders to issuing permits that spelled out in advance what was allowed or prohibited.

He said the state surveyed the 28 major river basins every four years and issued orders to major waste dischargers. The orders required such fundamental measures as building primary and later secondary treatment systems to remove pollutants.

When the permit system was devised to carry out the Clean Water Act, each mill and municipal waste plant was given limits on discharges of suspended solids and biological agents that consume oxygen in water.

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PROFILE: WILLIAM ELMAN

# Elman proud of fledgling agency's impact on Fox's self-cleansing ability

By Andy Thompson  
Post-Crescent staff writer



When William Elman moved to the Fox Valley in 1975 to head a newly created water quality agency, the Fox River was in trouble.

"The problem here was very significant," Elman said from his downtown Appleton office. "The river was really in bad shape."

Elman was the first — and only — director of the Fox Valley Water Quality Planning Agency, which was established as part of the 1972 federal Water Pollution Control Act. The agency had no regulatory authority, but it played a critical role in serving as a regional springboard to addressing pollution problems on the Fox River.

The agency, which was funded at the beginning by federal money and eventually was financed by a combination of federal, state and local funds, remained intact until 1989.

Elman's agency was credited with assisting in the development of an innovative model to establish the lower Fox's self-cleansing ability, or assimilative capacity, and with setting wasteload allocations for most major dischargers on the Fox.

During its existence, FVWQPA assisted in recti-

fying the thorny problem of low dissolved oxygen levels in the river — a problem that caused severe restrictions on what could survive in the river.

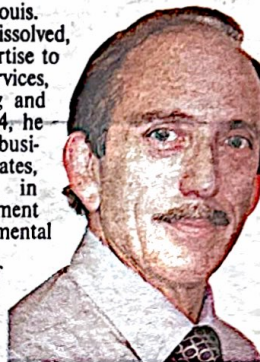
"It was a major problem," said Elman, a Brooklyn, N.Y., native who moved to the Fox Valley from St. Louis.

After FVWQPA dissolved, Elman took his expertise to Integrated Paper Services, working on planning and development. In 1994, he launched his own business, Elman & Associates, and he has been in demand as a government relations and environmental affairs consultant.

Elman is proud of the work that he and his staff did at FVWQPA. It was controlled by a governing board and was classified as a special-purpose unit of government. The office was located in downtown Menasha.

During its funding peak, there was a staff of eight, including Elman, an environmental engineer, an aquatic biologist, a public information officer and other specialists. At the end, Elman was the only one left.

Elman recalled that for 10 of the 15 years that FVWQPA was in effect, there was a need to con-



WILLIAM ELMAN

vince various governmental units that continued funding was necessary.

"It was a battle every year," he said.

Elman is not bitter that the agency disbanded, but he pointed out that "some people say that was a mistake."

"I was disappointed to see the idea of it end — a single (water quality planning) agency working in the area," he said, adding that the agency worked with communities and industries from Fond du Lac to Green Bay.

The agency became known internationally for its work on water quality planning. Back in 1984, officials from the Bay of Plenty Catchment Basin in New Zealand asked to visit FVWQPA in hopes of learning more about its operations.

Interest in Elman's agency also came from Sweden, Germany and the United Kingdom, among other locations.

After the agency began its work in the mid-1970s, it became clear that a major priority was the low dissolved oxygen levels in the Fox. Back then, the levels sometimes dropped to zero parts per million on certain parts of the river (5 parts per million was the acceptable level), meaning that only fish such as carp could survive.

Elman said the problem was caused by the high levels of biological oxygen demand (BOD) substances that flowed into the river from the paper industry and municipal treatment plants. At times of low water flow and high temperatures, the riv-

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## DNR: Sophisticated methods have evolved

Initially, the goal was "best practicable treatment" or BPT, as defined for some 21 industrial groups by the EPA, with Wisconsin and other state government and industrial representatives on a national board writing the guidelines. The manufacturing process of each mill and its production capacity determined the required degree of cleanup.

"Practicable" meant what was workable scientifically and economically. "Best available technology" or BAT was the next step up.

The DNR issued the first round of discharge permits under the Wisconsin Pollution Discharge Elimination System (WPDES) in 1974. "That was a big step," said Didier. Paper mills, dairy plants, municipalities and other dischargers were given until July 1, 1977, to build treatment systems capa-

ble of meeting requirements of their permits.

A sophisticated merger of technology and regulatory methods evolved. By 1977, attention shifted to the next steps, identifying BAT for each industry and pursuing the goals of making rivers "fishable and swimmable" by July 1, 1983, and achieving "zero discharge" of pollutants by 1985.

A major battle on the DNR Board was over waste load allocation, determining how much each mill on the river could discharge within the river's capacity to absorb it while allowing mills to continue operating and growing.

The board, Didier and other DNR regulators and the industries battled over computer models that sought to predict amounts of oxygen in the river at each mill and municipal treatment plant, as rates of flow and temperatures in the river changed

with the seasons.

One of Didier's successors is Ed Lynch, DNR remediation-redevelopment director, whose job is working with the EPA on the next step of cleanup, removing sediments laden with PCBs and other industrial deposits that pre-date present-day regulations. "The Clean Water Act is great," he said, but it was a two-edged achievement.

It brought the river back to life, reviving sport-fishing, recreational boating and swimming.

But with fishing came fish advisories — public health warnings against eating more than specified amounts of fish or fish larger than certain sizes — because PCBs, mercury and other chemicals accumulate in fish when they eat smaller organisms that take nutrition from contaminated sediments and water.

**'A MARVELOUS ADDITION'**

# Eagles make triumphant return to Valley from near extinction caused by DDT

By Kathy Walsh Nufer  
Post-Crescent staff writer

**R**on Vander Velden pulls his van off the road near Kaukauna's 1000 Islands Nature Center and mounts a telescope on his driver's side window.

He focuses on the giant cottonwood tree that stands tall on one of the larger islands dotting the Fox River.

Training his powerful lens 12 feet below the tree's top, he hones in on a nest wedged in the spindled

branches, a nest that is 6 feet long, 5 feet wide and 4 feet high.

Vander Velden looks for signs that someone is home. It's time, he says, to tune in to the private lives of the Fox Valley's very own resident bald eagles.

"I like to take a peek without disrupting their daily routine," says their doting uncle.

He has been "baby-sitting" this family for more than a decade.

Vander Velden, an avid eagle watcher who teaches environmental science at Kaukauna High School, has been monitoring the lives and times of the birds since a pair of moved in during the winter of 1987-88.

Their arrival, and the fact that they have continued to nest here, sharing the Fox's bounty with



Photo from 1000 Island

**EAGLES, ONCE** seen only in wilderness areas, have apparently found a way to live with humans in an urban environment.

dozens of eagles who now "winter" along the lower Fox, is a sign of the triumphant return of America's bald eagles from near extinction caused by chemical DDT.

It is also a sign that eagles, once seen only in wilderness areas, have found a way to live with humans in an urban environment.

Vander Velden notes that until the late 1980s, eagles had not been documented along the lower Fox since before the turn of the century.

The fact that they have moved in across the riv-

er from International Paper Thilmany mill (there is also an active nest near Little Lake Butte des Morts and roosts in various parts of the Fox Cities), is a testament to their adaptability and "our finally wising up" and banning chemical DDT in the early 1970s, he says.

As a result, we get to enjoy a fascinating creature.

Vander Velden describes the eagles, with their distinctive white-feathered heads, piercing eyes and magnificent 7-foot wingspans as "power birds. They stir good feelings. To have them soaring right in our own community is just uplifting. They have been a marvelous addition here."

Vander Velden checks on the eagles often. "I never tire of it," he says. "It's just exhilarating. They're the most interesting creature. Just from the scientific point of view, they are at the top of the food chain."

Eagles are fond of open water in winter, and they found it here amid the dams, locks and hydro-turbines that assured them easy access to an abundant food supply.

Sheepshead, bullhead, baby goslings and ducklings — the smorgasbord offered up by their Fox River eatery — proved just too tempting a feast to refuse.

Soon other eagles had joined the original pair of residents for the winter.

In the winter of 1994 Vander Velden spotted as many as 29 eagles of all ages at the roost.

"They have so much fish to choose from and

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## Elman: Group made major impact on Fox

er's dissolved oxygen level was suffocating.

Elman said the river was not dead, "but it was producing the least desirable of the fish and organisms."

It was clear that there had to be a reduction in the level of BOD discharges into the river, and it also was clear that wastewater plants had to provide for more advanced treatment methods.

FVWQPA worked with the state Department of Natural Resources and other officials to establish a water quality model that would raise the dissolved oxygen level in the Fox. It was determined that the river had a natural ability to assimilate wastes to a point, and a wasteload allocation process was developed that was based on flow and temperature levels in the river.

After the wasteload allocation levels were established and put into practice, the results were swift and dramatic.

The process began in 1983. The next year, dissolved oxygen levels increased, a varied fish population returned and organisms that could survive in the '70s were again present in the Fox.

"The results were almost immediate."

Elman said the allocation process meant that each discharger put out a certain level of BOD, based on a series of factors. "We never allowed more BOD going into the river than it could assimilate," he said.

"It was kind of a breakthrough type of thing," he said of the model that was used in addressing the situation.

FVWQPA's work extended beyond the dissolved oxygen problem on the Fox. That effort dealt with point source pollution of the surface water. Concerns such as groundwater pollution and toxic contamination from runoff from farms, construction sites and other non-point sources existed then and still exist today, said Elman.

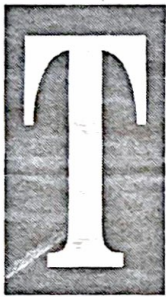
Elman placed a great deal of importance on working cooperatively with the various governmental agencies and business interests during his years at the agency. He believed in open dialogue between parties and frequent meetings to keep all sides informed about various issues.

"When I first came here, there was a lot of suspicion," he said. "You have to meet continually; you have to keep the dialogue going."

## 1000 ISLANDS ENVIRONMENTAL CENTER

# For decades, 1000 Islands has been a wonderful haven for children to explore

By Kathy Walsh Nufer  
Post-Crescent staff writer



Today Kaukauna's 1000 Islands Environmental Center is a premiere educational facility that annually draws up to 60,000 visitors, from bird watchers and crawfish hunters to snowshoers and 18,000 schoolchildren on field trips.

The 350 acres it adjoins are home to the center's educational programs and recreational activities, 5 miles of trails, much of it along the river, and animals as varied as bald eagles, white-tail deer, muskrat and coot.

Inside the center one can see an assortment of live parrots, crows, cockatiels, fish and turtles, as well as major mounted animal collections.

Just completed is a 4,000-foot blacktopped trail, an observation deck for eagle watching and a canoe launch. Additional land along the river is also being purchased to gain more frontage.

When Lee Hammen, the center's first and only naturalist, came on the scene 20 years ago, however, the facility had not even begun to reach its potential for showcasing the Fox River and its environs as a natural resource worth preserving.

Hammen's headquarters in 1978 was a one-room remodeled garage, a parting gift from Kaukauna Parks Department after it relocated.

There was no telephone, no bathroom and virtually no budget, he recalled. "We were pretty rustic."

But 1000 Islands was not unknown. Local hunters, fishers and nature lovers had been coming to the "islands" since bands of Fox and other American Indians discovered fish and game here in plentiful supply.

The 1000 Islands also held great appeal for the settlers who followed.

Old-timers have fond memories of collecting arrowheads along the banks, swimming in the Fox, visiting Reichel's pond and the ice house here, and bagging waterfowl in one of the best hunting areas in northeastern Wisconsin.

Situated on the Mississippi Flyway, a major migratory corridor, the preserve is home to many species of birds and water fowl, including great blue herons, bitterns and mergansers.

"People spent a lot of time putzing around in the islands," said Hammen, who as a youngster used to run his family's beagles here with his dad. "It has always been a great place for kids to explore."

Which brings us to the question Hammen is most often asked: Are there actually 1,000 islands? "Well, when the water goes down and you count every "rock" with a tree on it in the river we have about 1,000," Hammen explained.

"When the water rises we have about 100. Historically, I've never been able to find out, or seen in writing, who actually said let's call them the 1000 Islands."

In 1969, the City of Kaukauna created the 1000

Islands Conservancy Zone, setting aside 240 acres of woodland and river to be preserved and protected.

In 1976, thanks to the thoughtful mood inspired by the country's bicentennial celebration, the city established a "center" adjacent to the Conservancy Zone.

The number of people who recognize what a historic and natural treasure this area is has grown gradually, said Hammen, who came to the center in 1978.

He cites the funding the center now gets from Kaukauna School District as well as the city of Kaukauna and Outagamie County, and the support provided by volunteers, Friends of the 1000 Islands, private donors and local industry, notably International Paper's Thilmany division, located across the river.

Elaine Ven Rooy, community relations supervisor for Thilmany, has a long connection with the center on both professional and personal levels.

Thilmany does a number of cooperative programs with the center, she said, from offering a joint papermaking program for schoolchildren to Thilmany retirees building the center's bird coops, and squirrel and oriole feeders. "It's such a natural fit for us," she said.

Ven Rooy is a 17-year member of the Friends of 1000 Islands board and has watched the programming build.

She said she loves to take walks at the center. "I like to take my lunch and walk on the trail, especially in spring when water is up and rushing under the boardwalk. It's really cool."

CONTINUED FROM PAGE 55

## Eagles: Valley welcomes triumphant return

our nest production is a direct reflection of that," he says, noting that the Kaukauna nest set a state record for producing triplets from the same nest three years in a row (1991-1993). The nest also produced triplets in 1995 and again this past spring.

Vander Velden has been documenting the eagles' activities season by season since 1987-88.

He has learned to be patient. "It's a lot like watching paint dry at times. Sometimes they will just sit perched hour after hour. Then suddenly you get a 15-minute aerial courtship display. They are just phenomenal. They even do barrel rolls."

In spring he monitors when the first egg is laid, the incubation period and the first evidence of hatching.

In May a state Department of Natural Resources team stops by to collect data. A tree

climber is hired to go up and pass down the eaglets so that blood and feather samples can be drawn to measure toxins in the food supply and initiate DNA blueprinting. They are also weighed and banded.

At the end of June or early July, the young take their grand leap out of the nest and Vander Velden has to "tune in" with his telescope to see how well they are doing.

His checks are less frequent in late summer and fall. The best times to spot the most activity, he says, are around sunrise and sunset.

Vander Velden worries that this past spring may have been the last for field monitoring of the



VANDER VELDEN

eagles. A DNR toxicologist has told him that funding is drying up for eagle research, and he believes it would be a shame to stop now.

"I feel very strongly with all the emphasis on river cleanup and PCBs that here is a golden opportunity. We have 10 years of data. I don't know of another nest with such extensive data. If they want to monitor downstream, this is the ideal site," he said.

He notes field monitoring has shown that the gloom and doom of PCBs did not materialize the way some anticipated, but many questions remain.

"At first there were fears of nest failure and one year (1990) there was," he explains. "We had an added egg with 36 parts per million of PCBs." Since then, however, the 1000 Islands nest has thrived.

## CHEMICALS IN THE FOX RIVER

# DNR reports Fox receives more chemicals than any river in state

By Ben Jones  
Post-Crescent staff writer



ollution controls have helped fish return to the Fox River, but they haven't stopped the flow of chemicals into the river's waters.

According to Department of Natural Resources estimates, the river receives more chemicals each year than any river in Wisconsin. Nearly half of the total chemicals companies report discharging in the state are discharged into the Fox.

Each year, the DNR uses company estimates to create a Toxic Release Inventory that tracks what is being released into the river.

The latest figures, reflecting 1996 discharges, indicate a total discharge of nearly 1.5 million pounds.

Ten companies on the Fox reported chemical releases, the largest percentage of total chemicals coming from a Green Bay paper company.

Fort James Corp., formerly Fort Howard Paper Co., 1919 S. Broadway St., Green Bay, reported release of 1.4 million pounds of nitrate compounds. Repap Wisconsin Inc., now known as Inter Lake Papers, 433 N. Main St., Kimberly, reported 1996 nitrate releases of 44,227 pounds.

Seven other companies on the lower Fox reported releases of 10 different types of chemicals, all considered toxic and are each included on at least one federal regulatory list.

The health effects of these chemicals is difficult to determine.

One group of chemicals released into the Fox, chromium compounds, are ranked in the top 10 percent of most hazardous chemicals by the U.S. Environmental Protection Agency. They are a suspected cause of cancer and respiratory problems in humans. They are on four federal regulatory lists.

In 1996, one pound of chromium compound was released into the river.

This is a fraction of the 1.4 million pounds of nitrate compounds released by Fort James.

But nitrate chemicals may not be as harmful as other chemicals.

Nitrates don't make the EPA's top 10 percent of hazardous chemicals. The chemical is suspected to cause cardiovascular problems, but it makes only one federal regulatory list.

Mark Reimer, senior counsel for Fort James, said the chemical plays an important role in the plant's wastewater treatment facility.

It is used to help break down more harmful substances that reduce oxygen levels in the water.



## STILL GOING INTO THE FOX RIVER

Here are the 1996 chemical releases reported by manufacturers on the lower Fox River. All releases in pounds.

■ **Manganese compounds** (Used in aluminum production, steelmaking and dry cell batteries, compounds used for varnishes, fertilizers and food additives): **4,380**

■ **Zinc compounds** (Used as a coating on iron and steel, in making brass metal alloys, car parts, electroplating, batteries, electrical products, paints and fumigants): **3,686**

■ **Chlorine** (Used as a bleach, oxidizing agent, disinfectant in water purification): **992**

■ **Ethylene glycol** (Used in anti-freeze, paints, laminates, auto brake fluids, ink, tobacco and wood stains and used to de-ice aircraft wings): **464**

■ **Nitrate compounds** (Accelerates the burning of combustible materials): **1,444,227**

■ **Methanol** (Solvent, cleaner and fuel): **25,000**

■ **Ammonia** (Used in making fertilizers, explosives, plastics, dyes and textiles): **5,744**

■ **Chloroform** (Used as a cleansing agent and in the manufacture of refrigerant and fire extinguishers): **250**

■ **Catechol** (Used in papermaking process): **34**

Source: Wisconsin Department of Natural Resources Bureau of Integrated Science Services.

"We don't believe nitrate chemicals are harmful to humans," Reimer said.

While all the chemicals dumped in the Fox are considered toxic, risks to humans may be minimal.

Chuck Warzecha, a risk assessor with the Wisconsin Department of Health and Human Services, said the risk to humans is based on the type and length of exposure.

He said ingestion poses the greatest risk to humans with any substance.

River water is seldom ingested, even accidentally by swimmers, he said.

Another factor to be considered is exposure is smaller to humans as chemicals are diluted in the river, Warzecha said.

Chemicals like PCBs, that accumulate in fish tissue, pose risks to humans when ingested.

He said chemicals the TRI lists do not accumulate in fish tissue.

Warzecha said he was confident DNR discharge permits reduce chemicals to a level safe to humans.

"These permits are based on much higher levels of exposure than would likely be found in the Fox," he said.

While chemical releases continue into the river, the DNR study indicates that statewide, they are on the decrease.

Wisconsin manufacturers reported a 12.5 percent decrease in chemical releases into the environment, from 33.6 million pounds in 1995 to 29.4 million pounds in 1996.

Statewide, 857 facilities reported releases of 578 specific chemicals in 28 categories.

## FARM RUNOFF

# Farmers taking bold steps to minimize or eliminate nonpoint source pollution

By Dan Wilson  
Post-Crescent staff writer



armers and farming activity often take the brunt of criticism as a source of nonpoint pollution in our rivers and streams.

The very untidy nature of farming, dealing with manure and chemicals, also adds to the concern. Farmers are taking steps, often expensive steps, to minimize or eliminate nonpoint source pollution.

Judy Springstroh owns a family farm in the Town of Freedom, about three miles outside the Appleton city limits.

The Springstrohs installed a farm version of a storm sewer system underneath their farm back in the 1970s, before farm-based environmental initiatives were fashionable.

Duck Creek, which shares watershed space with the Fox River, dissects their 280-acre farm. Springstroh's late husband, John, installed a network of drain tiles under the farm.

"We had pockets all over the area which were holding water," said Springstroh. "This water would get stagnant, the cows would stand in it and these areas were unproductive. With the help of the land conservation office, they helped us design a system."

Before the land was not draining properly, so it required a combination of re-landscaping and trenching in tiles.

"On each side of the drainage ditch there are stones to filter the water so that the water is clean before it enters Duck Creek," she said. "Everything is designed so that runoff and stormwater goes into a drain tile."

The rocks and vegetation are in use all over the farm to serve as buffer strips to filter runoff.

Springstroh has found the conservation practices not only keep unwanted pollutants out of the watershed, but keeps the healthy topsoil also from taking a trip downstream.

"We have been doing minimum tillage for the past 20 years and it keeps the sediments and residues from flowing into the creek," he said.

Once erosion was under control, the Springstrohs moved to the next level.

"In 1983 we put in the slurry storage," he said. "It contains liquid manure."

The tank holds 525,000 gallons of liquid manure, all of which is kept and reused.

All liquid manure from the barn is pumped from under the barn area and into the tank. In the barnyard, runoff is contained and channeled into a rocky filter strip area which, along with vegetation,



Post-Crescent file photo

**THE UNTIDY** nature of farming has Fox River Valley farmers concerned over nonpoint pollution.

covers the 100-yard distance to Duck Creek.

Runoff from the roof of the barn goes into a downspout which is hooked into the underground drain tile system.

Springstroh said much of the erosion control work was done on a cost-sharing basis with the County Soil and Conservation Service.

"Everything is landscaped to maintain the flow of runoff in a certain direction," she said. "We had to do a lot of landscaping to make sure things flow to the right place."

The manure slurry store is emptied twice a year, and it goes back to the fields.

"We have a service come out and they empty it and then inject it into the field. That prevents any runoff," she said.

That makes it unnecessary to buy fertilizer.

So what about pesticides?

"We use some weed control chemicals. The only one we would use is a pesticide to control leaf hoppers in alfalfa."

"Otherwise, we rotate the corn, never leave it more than two years in the same field and we cultivate it."

"All in all, you are making better use of the land," she said.

**"We had pockets all over the area which were holding water. This water would get stagnant, the cows would stand in it and these areas were unproductive. With the help of the land conservation office, they helped us design a system."**

JUDY SPRINGSTROH, who owns a family farm  
In the Town of Freedom, describing a network of drain tiles under the farm

## RIVERTOWN: LITTLE CHUTE

# Little Chute's use of the Fox River still focuses more on recreation than industry

By Judy Williams  
Post-Crescent staff writer

**D**ella Grimm remembers her father handing her cigars to bring down to the Fox River.

Grimm would give the cigars to the men operating the Zeeland flour mill, an incentive to turn on the waterwheel. The result was the making of a roiling waterfall that was the source of great fun for her and her swimming companions. It was, effectively, an early-

day waterpark.

Grimm's memory of frolicking in the cool waters of the Fox River holds true today, because Little Chute's use of the river still focuses more on recreation than industry. The village's two premier parks, Heesakker and Doyle, are along the riverbank. A third, Island Park, is, as its name suggests, on a small island offshore.

Compared with neighboring communities along the Fox River, this village, whose population in its early days was 99 percent Dutch Catholic, could be characterized as "a bedroom community," said Lee Vosters, who grew up in Little Chute and worked for the U.S. Army Corps of Engineers here for many years before retiring several years ago.

Where other cities saw paper mills — destined to become the economic lifeline of the Fox Cities — sprout along their river banks, Little Chute has none.

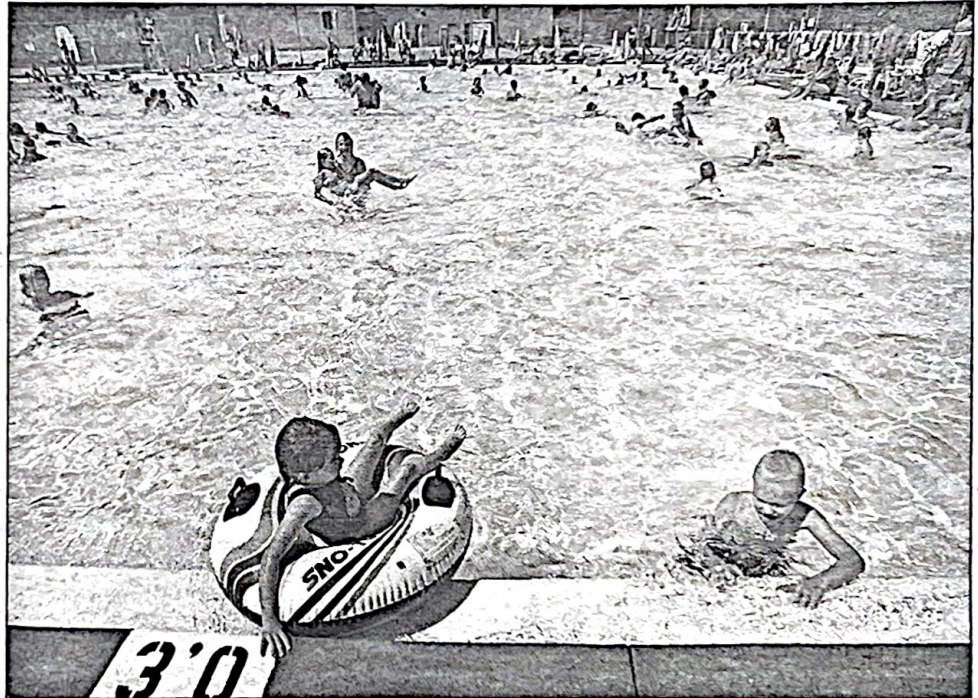
But the paper mills provided jobs and Little Chute supplied a willing work force for the factories across the river in Kimberly and Combined Locks, where mill managers hired boats to bring the workers across the water to and from their jobs.

When the Fox River Improvement Company embarked on the gigantic task of building a series of canals along the river, one was sited in Little Chute. Dutch settlers supplied some of the labor.

Little Chute's only recorded mill was a flour mill, built in 1863 by Arnold Verstegen and his brother, John, on the riverside. They named it the Zeeland Mill after their hometown in Holland. The mill operated by a waterwheel fed by the rushing river water.

"The river never stops flowing, and the water that goes over the dam here in Little Chute has more power than all the windmills in the whole of North Brabant combined," wrote Verstegen in an 1882 letter to relatives still in The Netherlands, explaining why he rejected their traditional windmill as his power source.

But the village lacked the industry located in nearby communities and the river never took on importance in the economic development of Little



Post-Crescent file photo

**WITH MORE THAN** 10,000 residents, Little Chute still has no industry dependent on the Fox River. Instead, village officials continue to hold its riverfront land for recreation uses, like Doyle Park, pictured above.

**Where other cities saw paper mills — destined to become the economic lifeline of the Fox Cities — sprout along their river banks, Little Chute has none.**

Chute beyond the general prosperity it brought to the Fox River Valley.

"I don't remember anything that Little Chute had that was dependent on the river," said Vosters. What he does remember is the sound of the tugboats hauling coal to the mills across the river. The last commercial coal boat run up the river was in 1959.

"That was one of the nice things living by the river. You could hear the old tugboats hauling at night, the old lonesome horn blowing," said Vosters. "They would blow four times to open the locks, three for the bridge."

Most of Vosters' childhood memories focus on the fun the river provided.

"We spent a lot of time down there," he said. "It

was the first place to freeze up and we'd skate there. We would fish there as kids and swim there, right in the river. There was always a little lagoon with a sandy bottom. It was a good place for recreation."

Virgie Janssen's great-great-grandfather, Martin Joosten, was one of the early settlers who helped build the canal and locks system in the 1850s. Interest in her ancestors has spurred Janssen to become a Little Chute historian.

She, too, remembers the river mostly as a place for childhood fun in the 1950s.

"In those days, we were never warned about pollution in the water. We were only warned about safety," she said.

In summer, a lagoon off the end of Adams Street was the swimming pool. "At night, when there were fewer swimmers, you had to keep your feet moving or the crabs would bite you," Janssen recalls.

In winter, water was drained from the canal, with only a small depth left to freeze. That was the local skating pond.

With a current population of more than 10,000, Little Chute still has no industry dependent on the river.

## RECREATION ON THE FOX

# Potential Superfund designation won't hinder Valley's recreational development

By Sheila Krambs  
Post-Crescent staff writer



For a lot of communities, the development of park and recreation sites won't be hindered by the outcome of the debate concerning the Superfund status of the Fox River.

In Neenah, where all of the parks are upstream of the paper mills, plans are to improve the quality of shoreline on the city's largest waterfront park.

"We have a major shoreline renovation project in the works for Riverside Park," said Eileen McCoy, the director of parks and recreation in Neenah. "We plan on putting in 420 feet of wood wharf that will be both boater-friendly and fisher-friendly. It is important that it is accessible from both sides."

Much of the land in Neenah is already owned by either the city for parks or by private owners. There are no immediate plans by the city to purchase more land on the river for development.

In Appleton, the Parks and Recreation Department is working on connecting sites along the river with developed trails. Many of the present trails are united by footpaths people have made on their own.

"We continue to explore the path opportunities on the river," said Curt Solberg, the landscape architect for the city of Appleton. "Some of the land we are looking at is private land, and those people do not want that land to be made public."

Appleton recently purchased the Vulcan Heritage site, which is located near the Atlas Paper Mill on Water Street. The land will be developed as a recreational site.

The largest project that Appleton hopes to complete in the near future is a path that would connect the Vulcan site west to Lutz Park. The new path would cross into land owned by the Appleton Yacht Club, but Ed Christie, commodore of the club, said the new walkway wouldn't cause a problem with club members.

The Appleton Yacht Club also has ideas for future development of property along the north bank of the river. The nonprofit organization is looking into the purchase of adjacent land to accommodate more members.

But the biggest project that would aid the club is the reopening of the Fox locks.

Now, club members and other boaters can only use the river to the south toward Little Lake Butte des Morts and Lake Winnebago. The reopening of the locks, which Christie notes is projected for in



Post-Crescent photo by Kristyna Wentz-Graff

VIEWED FROM the College Avenue bridge, a trail mirrors the shoreline of the Fox River.

## Fox River provides rowing enthusiasts a prime training area

By Sheila Krambs  
Post-Crescent staff writer

While much of the focus concerning the Fox River revolves around its listing as a possible Superfund site, Appleton Ald. Peter Hensler continues to get up before the sun four times a week and scull on the river.

Hensler, along with 40 other members of the Fox Valley Rowing Club, head out on the river around 5:30 a.m. to work out. The Fox River, according to Hensler, provides rowers with the best training area not only in Wisconsin, but the Midwest.

"The stretch from Peabody Park in Appleton to Sunset Park in Kimberly has a relatively low traffic level for motorized watercraft," Hensler said.

One might think that a small scull would bring a rower in contact with the contaminated river, and that frequent users like Hensler could face undesirable health consequences. Hensler is quick to note that while that possibility does exist, it is rare.

"The possibility of rolling over does exist, yes," Hensler said. "But the chances of that happening are not significant. While the river prevents people from swimming or water-skiing on it, I think the river gets a lot of recreational use."

Many recreational users of the Fox River share the same sentiment Hensler has. Despite the river's pollution due to PCBs and other toxins, the waterway is still suitable for recreational boating.

Please see **RECREATION**, Page 62

Please see **BOATING**, Page 62

## FOX RIVER FISHING

# All along the Fox River, fishing hot spots await the savvy angler

By Benjamin Wideman  
Post-Crescent staff writer

**F**inding a place to anchor a fishing boat near the De Pere dam in late fall or early spring is as difficult as finding a spot to park near Lambeau Field before a Green Bay Packers game.

The dam, located just south of Voyageur Park beneath the Claude Allouez Bridge, is by far the most popular fishing area on the lower Fox River.

Appleton's Darrell Toliver has seen the frenzy at its peak.

"It's packed," he said. "I can envision 300 boats in there at once. There's a lot. All the boat ramps are full, parking lots are full. The biggest problem is that anglers have to be aware of other anglers because they're so close."

Toliver, a *Post-Crescent* outdoors correspondent who has fished the river for about 15 years, knows several popular fishing locations on the lower Fox, but the De Pere dam is easily the most popular.

And there's a reason for it.

The dam serves as an impenetrable barrier to fish who are trying to swim upstream through the lower Fox from the bay of Green Bay, Lake Michigan and their numerous tributaries.

In the late fall or early spring, trout and salmon have been known to congregate there.

When fish reach the dam, they essentially get corralled with nowhere to go. And that's where the fishermen lurk.

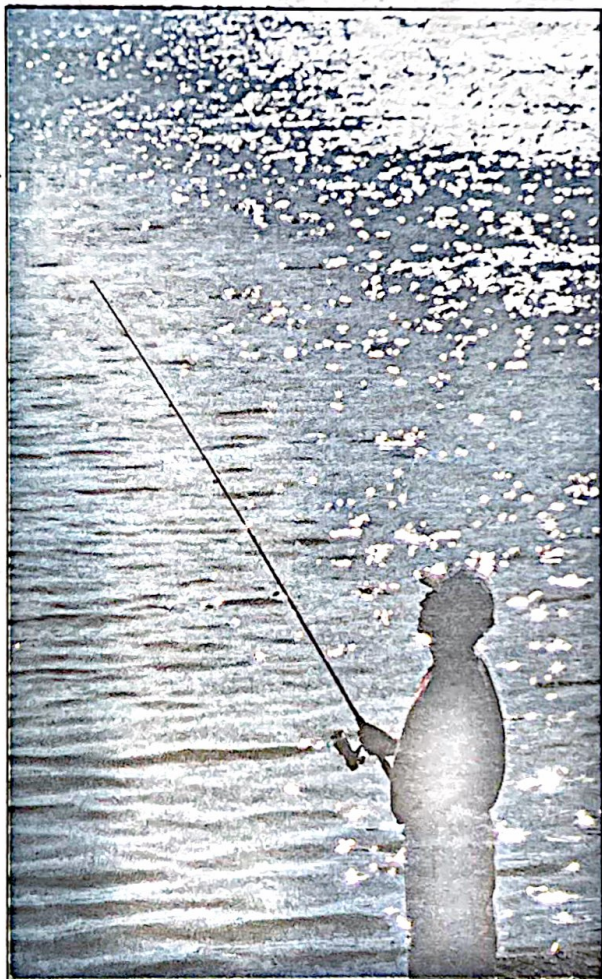
"It's the lure and attraction of that trophy fish," Toliver said. "Someone may catch that salmon or 30-inch walleye, who knows?"

West of Menasha, Little Lake Butte des Morts is also popular with fishermen, especially those seeking perch, smallmouth bass or walleye.

Toliver added that down river near Lutz Park in Appleton, smallmouth bass, bluegills, rock bass and catfish are commonly caught.

Appleton's Peabody Park, two miles down from Lutz, and Kimberly's Sunset Point Park, another two miles down from that, each offer shoreline fishing opportunities, Toliver said.

The boat launch just up from Wrightstown provides more shoreline fishing and is one of the last well-known fishing locations downriver before reaching the De Pere dam.



Post-Crescent photo by Dan Powers

## 1998 PCB ADVISORIES

### From Little Lake Butte des Morts to the dam at De Pere

■ Eat no more than one meal a month or 12 meals per year for any size of the following fish:  
Walleye, Northern Pike, White Bass, White Perch, Smallmouth Bass

■ Eat no more than one meal a week or 52 meals per year for any size of the following fish:  
Yellow Perch

■ Do not eat any size of the following fish: Carp

### From the mouth of the river up to the De Pere dam

■ Eat no more than one meal a month or 12 meals per year for any size of the following fish:  
Walleye (less than 16 inches), Northern Pike (less than 25 inches), Black Crappie (less than 9 inches), Bluegill (all sizes), Rock Bass (all sizes), Yellow Perch (all sizes), Sheepshead (less than 10 inches)

■ Eat no more than one meal every two months or six meals per year for the following fish: Walleye (16-22 inches), Northern Pike (larger than 25 inches), White Sucker (all sizes), Black Crappie (larger than 9 inches), Smallmouth Bass (all sizes), Sheepshead (10-13 inches)

■ Do not eat the following fish:  
Walleye (larger than 22 inches), White Bass (all sizes), Carp (all sizes), Channel Catfish (all sizes), Sheepshead (larger than 13 inches)

## LOWER FOX RIVER FISH FAMILIES

### GAME FISH

Game fish on the lower Fox River, from Little Lake Butte des Morts to the mouth of the river include:

- Walleye
- Northern Pike
- Sauger
- Largemouth Bass
- Smallmouth Bass
- Hybrid Musky
- Rainbow Trout\*
- Lake Trout\*
- Brook Trout\*
- Brown Trout\*
- Chinook Salmon\*

\*These fish are usually found only in the early spring and late fall when temperatures are cool enough, and located downriver from the De Pere dam.  
Source: Wisconsin DNR

### PAN FISH

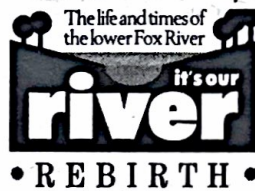
Pan fish on the lower Fox River, from Little Lake Butte des Morts to the mouth of the river include:

- Yellow Perch
- White Bass
- Black Crappie
- Pumpkinseed
- Rock Bass
- Green Sunfish
- Bluegill

Source: Wisconsin DNR

### GO SEE

Pictures of most of these fish can be found at the Appleton Public Library. Go to the second floor non-fiction books section and look for "Sportsman's Guide to Game Fish," by Byron Dairymple. Or get "The Encyclopedia of Fishing" by Dorling Kindersley Inc.



CONTINUED FROM PAGE 60

## Recreation: Valley's development continues

five years, would benefit not only his club, but the Fox Valley as a whole.

"When the locks open again, we hope to become the port of Appleton," Christie said. "People from all over can enjoy what we and the river have to offer."

Christie noted that the Rapid Croche lock south of Wrightstown will likely stay closed and a boatlift will be provided, allowing boaters from the Valley to travel north to the mouth of the river in Green Bay.

The opening of the locks could cause travel difficulties with the Fox Valley Rowing Club, which was organized in 1988.

But according to Pete Hensler, who's a member of the club and is an Appleton alderman, the opening of the locks would benefit everyone who uses the waterway.

"Most often, the rowing club uses the river at an

early enough hour to avoid boat traffic," Hensler said. "There won't be too much movement on the river at 5:30 in the morning on a Tuesday. There is plenty of water and hours to share the river."

In Kaukauna, the reopening of the locks would increase the traffic through the city and at its lone docking site at Riverside Park. But according to Park and Recreation Director Gary Landreman, no major changes would occur for the city's recreation on the river.

As for park development in Kaukauna, a lack of waterfront property available for development has prevented its park and recreation department from growing its park system on the riverbanks.

"It would be hard for us to add more parks to the riverfront," Landreman said.

"We do not have the property to develop, and we would have to purchase it, which is not in our interests at this time."

At Kimberly's Sunset Park, the park and recreation department is in the process of developing its shoreline.

Al Schaefer, director of parks and recreation in Kimberly, said a walkway is in the process of being placed along the park's north side along the shore.

As for Menasha, plans are in the works to transform the railway trestle that connects the southwest part of Menasha with Fritse Park in the Town of Menasha.

"There is the potential for that bridge to connect a walkway from the Menasha lock to the marina riverwalk," said Menasha Director of Parks and Recreation Brian Tungate.

Plans are also in place for the same walkway to connect the Menasha lock with the downtown marina. The completed walkway, from the marina to Fritse Park, would provide more than a mile of recreational trails.

CONTINUED FROM PAGE 60

## Boating: Fox a popular recreational venue

and fishing.

"I see a lot of people recreating and fishing and enjoying the river," said Ed Christie, commodore of the Appleton Yacht Club. "There are beautiful views on the Fox and it is good to see people enjoy them."

"Some people feel the Fox is a bad river, but it's not," said Richard Grant, director of parks and recreation in the City of Appleton. "As far as water contact through boating and jet skiing, I see people use the river with them all the time. The PCBs are on the bottom of the river and not at the surface where they are. It's not like the river is raw sewage."

Many of the Fox Valley's municipal park and recreation departments feel the same way. They believe that while people in the community understand the health risks involved with contact with the river, many continue to recreate near or on the river because of its beauty.

"People use the river as a viewing aspect," Grant said. "It's nice to have a picnic by the river."

Appleton has four parks directly on the river. A fifth park, Pierce Park, has a walkway from its south side that leads to the banks of the Fox. Many provide visitors with playground and picnic areas while Lutz Park has a boat landing. Adjacent to Lutz Park is the land occupied by the Appleton Yacht Club.

Appleton also has a network of trails that run throughout the city, with some reaching to the banks of the Fox. Plans are in the works to expand those paved trails. At present, there are 1.6 miles of path on the south side of the river near the Banta

**"People use the river as a viewing aspect. It's nice to have a picnic by the river."**

**RICHARD GRANT, director of parks and recreation for the City of Appleton**

Bowl.

Menasha's major park on the Fox is Jefferson Park, which lies along the north branch. The 25-acre park contains such recreational opportunities as softball, volleyball and a swimming pool as well as a boat dock and fishing areas.

A new feature to Jefferson Park is a river walkway, according to Brian Tungate, Menasha's parks and recreation director. The paved walkway is expected to be completed by next year and will provide access to fishing spots along the river.

Another area many people can use in Menasha is the boat landing and marina in the downtown. The city provides docks for yachts, along with a walkway on the river edge.

Other than the walkways and fishing areas, Menasha doesn't provide the public with recreational activities on the river. The few they do run are on Lake Winnebago.

"By how the river comes through Menasha with the dams and locks, there is not much of an opportunity to do recreational programming by the river," Tungate said. "It is fairly hazardous in how the river lies. If the river was in its natural state, it

might be different."

As for the Neenah park system, most of the parks that have shoreline on the Fox River lie east of the paper mills. Neenah provides the most activities to its residents in comparison to other Fox Valley cities.

"We have a lot of shoreline for use by the people, not only on the river, but on Lake Winnebago," said Eileen McCoy, director of parks and recreation in Neenah. "We have an annual fishing derby on the river as well as sponsoring the Fox Valley sailing school at Doty Park. We feel that the river is best suited for those events."

The largest parks on the river in Neenah are Doty Park, Kimberly Point - which lies where the river meets Lake Winnebago - and Riverside Park, which is less than a half-mile downstream from Kimberly Point.

Each has a fishing wharf and picnic space. Kimberly Point's fishing area is accessible to the handicapped.

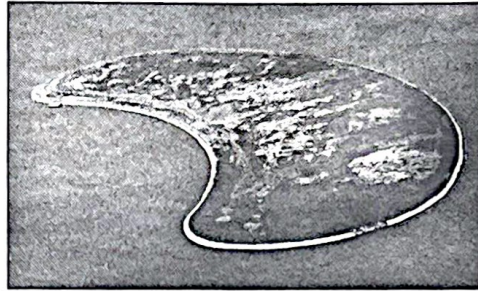
Riverside Park provides users with 2,050 feet of shoreline. The park also has a harbor for sailboats and a large playground area.

The park is also home to the Riverside Park pavilion, which hosts such activities as the Riverside Players and the Neenah Community Band.

Further downstream in Kaukauna, the city has just one park on the waterway in Riverside Park. The facility provides users with a shelter, baseball diamonds and a boat launch.

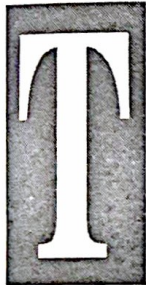
However, because of the lay of the river and the presence of dams, the city has few opportunities to serve park users.

## KIDNEY ISLAND



# Kidney Island has served well as a permanent graveyard for PCB-laced sediments

By Steve Wideman  
Post-Crescent staff writer



he name seemed most appropriate - Kidney Island.

Like a human kidney that becomes a collecting point for bodily wastes, Kidney Island has become the dumping ground for millions of tons of toxin-laden waste from the lower Fox River.

The kidney-shaped island, now formally called Renard Island, was born of human hands in the late 1970s to serve as a permanent grave

for PCB-laced sediments dredged from Green Bay's shipping canal, said Bob Behrens, who is in charge of several water quality programs on the lower Fox River for the state Department of Natural Resources.

"They couldn't just take and dump the material in the bay," Behrens said.

Actual dumping began in 1978.

"The PCBs in the sediment came basically through the lower Fox River from Lake Winnebago on down to Green Bay, essentially from paper mills, although there were other sources."

The 55-acre island, classified as a CDF or "Confined Disposal Facility," was constructed by the U.S. Army Corps of Engineers.

The state Legislature granted ownership of that portion of the bottom of Green Bay to Brown County for construction of the toxic waste dump.

"They drove steel plates down into the sea bed and supported it with large rock riprap," said Behrens.

One DNR report notes that the island, located about 800 feet off shore and just east of the main shipping channel, was designed to hold 700,000 cubic tons of dredged wastes. Behrens said the actual figure is significantly higher, about 1.5 million cubic tons.

"Kidney Island is basically filled right now, although a small amount of material could still be added due to settling over the years of material

**"Kidney Island is basically filled right now, although a small amount of material could still be added due to settling over the years of material already there."**

BOB BEHRENS, who is in charge of several water quality programs on the lower Fox River for the state Department of Natural Resources

already there," he said.

Behrens said that shortly after the island was completed, corps officials found the island would be filled significantly sooner than expected.

The corps was dredging the Fox River as far as Fort James Paper Co., formerly Fort Howard Corp.

A large area near Fort James designed to serve as a turn-around point has never been dredged, Behrens said.

Still Kidney Island proved inadequate for the storage task.

"They didn't have the capacity they needed to do the work," he said.

That prompted a proposal in 1985 by the corps to construct a 100-plus acre addition to the island.

"That was a real lightning rod for environmental groups and others concerned that the original island might leak and pollute the bay," Behrens said.

After more than a decade of court battles over

the proposed addition, Behrens said, the corps dropped expansion plans.

Dredgings are now stored in five holding cells constructed on former marshland near the Green Bay shoreline west of the shipping canal.

Behrens said the holding cells are constructed of natural materials and are not lined as is typical of similar cells with impervious clay.

"They do have drains under them to catch the water, which is treated before being released into a settling area," he said.

The cells are designed to dry the contaminated sediment.

"If we can find a long-term use for the material that is safe, then it will be hauled away," Behrens said.

The landfill, though full, has yet to be permanently capped.

Behrens said the type of cap placed on the island landfill will be dependent on its future use.

A committee of citizens and officials from Brown County, the DNR, the U.S. Fish and Wildlife Service and other interested agencies is currently pondering future uses for the landfill.

Some options already tossed around include making the island a sanctuary for birds and other wildlife, allowing hunting on the island and building a causeway from the shore to allow human access for a variety of recreational and educational purposes.

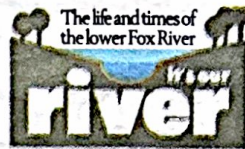
Behrens said Brown County, as owners of the island, will be responsible for the costs of closing the waste dump and monitoring its future.

"As part of the abandonment process we will look at long-term care and maintenance of Kidney Island," Behrens said.

Behrens said the DNR is particularly worried about possible damage to the island from storms that may rake Green Bay.

"We are concerned about that. We want to make sure storms don't damage the rock riprap. At this point our plan is to just leave the island sit. Right now, we are not aware of any major leaks," he said.

Brown County Executive Nancy Nusbaum said funds, in the form of tipping fees, have been set aside to assist in closing the island.



• REBIRTH •

## KIDNEY ISLAND



Post-Crescent photo by Mike De Sisti

# Officials in 'brainstorming mode' to transform island into a national showcase

By Steve Wideman  
Post-Crescent staff writer



A toxic waste dump located less than 300 yards from a busy amusement park could become a nationwide showcase for efforts to convert such landfills for safe public use.

Renard Island, formerly known as Kidney Island, could become a wildlife habitat area or a fishing hot spot on Green Bay in the near future, said Chuck Lamine, interim Brown County planner.

ner.

"We are still in a brainstorming mode," said Lamine, who represents the county at meetings of a citizens advisory committee charged with eyeing future uses for the dump, which is filled with shipping channel dredgings laced with PCBs and other toxic wastes.

"We have been working on developing an end-use plan for about a year now," Lamine said.

"We are looking at attracting federal funds to

make this project a model of what to do with these types of facilities, which are being built all over the place."

He said it will likely be early in 1999 before the committee forms a recommendation.

The committee also includes representatives of the U.S. Fish and Wildlife Service, the state Department of Natural Resources, the City of Green Bay Park Department and the Green Bay Harbor Commission.

Suggestions so far for future uses of Renard Island have included constructing a public-access causeway or bridge to the island, which is located 800 feet off shore from Bay Beach Amusement Park.

"But with price tags of nearly \$1 million each those are fairly costly projects," Lamine said.

He said another idea is to cap and beautify the island, providing a scenic view for restaurants to be developed on the bay shore.

"There are not a lot of restaurants in Green Bay connected with the water," Lamine said. "We have quite a lot of interest in making the island an amenity to the amusement park."

He said other proposals include constructing an air-borne tram system with a gondola car, which would touch down to a stop on the island, and con-

structing an amphitheater on the island.

"A lot of people with boats buy gasoline here in Green Bay and travel to Door County to see the attractions.

"We want to reverse that," Lamine said.

Creating a habitat for wildlife, including water fowl, is the least likely future use.

"There may be other places on the bay that are more appropriate, the conflict being do you want to encourage wildlife habitat that close to a recreation area," Lamine said.

The only barred potential use is commercial development, he said.

Lamine noted the island, considered to be a landfill by the DNR, has no formal closing plan as is typical of any landfill.

They (U.S. Army Corps of Engineers) built it without a closing plan," he said.

That could cause confusion as plans for the island's development continue to evolve.

"It's a chicken and egg situation. The island's use affects how you close and cap it. How you cap it depends on its use," Lamine said.

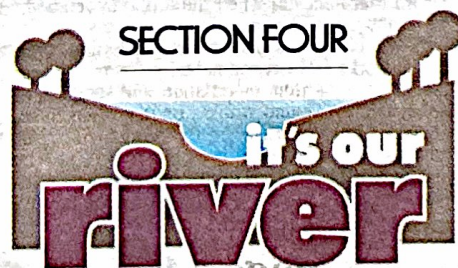
Once the advisory committee formulates a recommendation, the proposal will be forwarded for consideration to the Brown County Board and the City of Green Bay Common Council.

THE POST-CRESCENT

SUNDAY, OCTOBER 4, 1998



Post-Crescent photo by Dan Powe

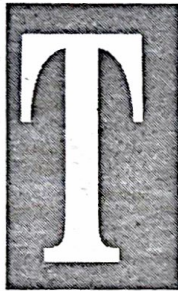


The life and times of the lower Fox River

## FOX RIVER ACCESS

# Next round of fighting over the Fox River may be over public access

By Avi Stern  
Fox Valley Inc. editor



The air still is crisp and the water calm when Hans C. Wurster greets the dawn, gliding atop the Fox River on a rowing shell.

Cutting through the blue-green surface, the 60-year-old co-founder of the Fox Valley Rowing Club has grown accustomed to a background chorus of three sounds: oars slicing into the shiny surface, the chirping of birds and the panting of

his own breath.

"We're rowing everyday where the PCBs are supposedly the thickest — and we're not glowing yet," jokes Wurster, who has spent a decade engaged in a burgeoning love affair with the serenity found along the waterway.

"This piece of the Fox River is the finest rowing venue in the state of Wisconsin," says the executive vice president of Bel/Kaukauna U.S.A., referring to the stretch of river between Telulah Park and the Cedars Dam in Kimberly. "What an opportunity — here we are, blessed with this tremendous asset right in our front yard."

Ten years ago, a coalition of community residents and Lawrence University officials successfully formed the club — "a town-and-gown arrangement" as Wurster calls it. The group has gone on to construct a boathouse and dock at Telulah Park.

"When you put an organization onto a property, you make it work," he says. "You get more people involved and you reduce vandalism. The problem is, there's darn little access to the Fox River in the city of Appleton. We're one of the few."

Nonetheless, Wurster remains optimistic that people increasingly are waking up to the potential of the Fox River.

"I'd like to think that we could be an Olympic training site in 10 years. We could be spawning Olympians," Wurster speculates.

If that prediction sounds optimistic, it represents only a fraction of the future foreseen by Val Wylie, executive director of the Fox Cities Convention & Visitors Bureau.

"Excursion boats, boat rentals, hiking trails, picnic beaches, fishing spots, music, boardwalks, boutique shopping areas, restaurants, bathrooms," she rattles off without taking a breath.

"If you would ask the next 20 people what factors into their choices in the places they vacation or take a three-day weekend, my experience is that 80 percent of them choose some place where there is water," she says.

"We get calls all the time from people who see a map of Wisconsin and see Lake Winnebago and

this big, wide river. They want a listing of all the hotels and resorts on the water, where they can rent boat and bikes.

"The potential is there. The table is getting set."

Sue Kinde, a member of Appleton's Riverfront Advisory Committee and president of the Northeast Wisconsin Land Trust, echoes Wurster's position that the future of the Fox River ultimately is tied to how — and how many — people become involved with it.

"I see a general 'returning' to the river," she says. "I think there will be more public access points as the industrial uses rely less on it. One of our goals is the creation of more public access to more locations."

"But, the fact is, (developing) riverfront property is incredibly complicated and it takes years to make something happen."



Post-Crescent photo by Mike De Sisti

**HANS C. WURSTER**, co-founder of the Fox Valley Rowing Club, is optimistic people are waking up to the potential of the Fox River.

Indeed, experts suggest, a slew of potential problems await those who wish to develop the Fox River.

One key factor is the economy, suggests William E. Sloey, a retired biology professor from University of Wisconsin-Oshkosh and longtime expert on the waterway.

"If the economy is good, the river is bad and vice-versa," he said. "We seem to have a historical record that indicates when the economy is good, we totally ignore the environment."

"FDR pushed us out of the Depression with public works and environmental projects. During the 1970s — a time of inflation and stocks not doing well — we undertook a lot of conservation efforts ... In the '80s, when the economy started going, we just stopped."

"When we don't have money, we somehow find religion again and start worrying about the future."

I see another period coming when we are going to be concerned about our environment and we'll see some groundswells starting.

"Unfortunately, it's probably going to get a little worse before it gets a little better."

Indeed, as renowned as the Fox River is for its beauty, recent history has made it more infamous as a source of conflict and confrontation.

Paper mills and environmentalists, public agencies and private sector forces, various levels and territories of government — all are mired in a seemingly endless war of words about the extent of Fox River pollution as well as engaged in a finger-pointing contest about whose job it is to clean it up.

The most bitter twist is that even if the Fox River were cleaned at a reasonable cost and to everyone's satisfaction, the waterway would inevitably spur a new set of battles, predicts Harlan Kiesow, executive director of the East Central Wisconsin Regional Planning Commission.

Simply stated, the Fox River is the nexus of a Catch-22: When it's dirty, everyone casts blame. When it's clean, everyone fights over who controls the resource, he said.

"The pollution issue is almost irrelevant," Kiesow says. "Clean or dirty, the opposing forces — owners vs. would-be owners — will remain in conflict."

Over the long run, there will be a cleanup of Lake Winnebago and the Fox River to make them suitable and usable waterways. Maybe they'll never be to the level of the pristine lakes of Canada, but they will eventually be clean.

The irony is, the cleaner the river gets, the greater demand for access and development gets. We're going to see a lot of development pressure on the river system and on fragile areas, such as wetlands that offer potential frontage," Kiesow says.

Development experts, prognosticating about just what form those battles may take, seem to reach consensus on at least a few predictions.

### Industrial expansion is unlikely

"The river is already crammed with water-using industries," says William Elman, founder of the municipal/environmental consulting firm Elman & Associates, 103 W. College in Appleton. "Because of the way discharge permits are now, the wastewater allocations are pretty much maxed out." Sloey agrees.

"We're at maximum capacity for industrialization on the river," he says. "There may be some permit shifting and switching, but unless politics get a lot worse — and they're pretty bad now — I don't see any major new mills being developed."

The days of the "old working river" — viewing the waterway as a resource for lumber, pulping,

Please see **ACCESS**, Page 68

## PRIME EXAMPLES

# Communities across United States successfully revitalize waterway resources

**S**keptics who believe the best days of the Fox River are behind it might want to consider the efforts of other communities that have successfully revitalized their waterway resources for recreational uses. In many cases, the municipalities accomplished a whole lot more — and started with a great deal less.

### Riverbank State Park, New York



This publicly funded project transformed a Harlem sewage treatment plant into a state park and athletic facility.

"The (1965) decision to locate in Harlem resulted in 25 years of community protest, political struggle and a variety of efforts to assuage the community by balancing the pain of locating a sewage treatment plant in its front yard with the benefits possible from its construction," architect Richard Dattner recalled.

Between 1980 and 1993, when the park finally opened, the project was designed and redesigned and shown to every community group imaginable. The final price tag — divided among federal, state and city sources — approached \$1 billion.

Built on the 28-acre roof of the North River Water Pollution Treatment Facility, the park encompasses five major structures: a 50-meter pool; a covered skating rink for ice skating in the winter and roller skating in the summer; a cultural center; a multi-use athletic building for basketball, volleyball, gymnastics and martial arts; and a restaurant with a 100-foot outdoor terrace.

Operated and managed by the state, Riverbank State Park has become the second most heavily used state park in New York, drawing more than 3.7 million visitors in 1995.

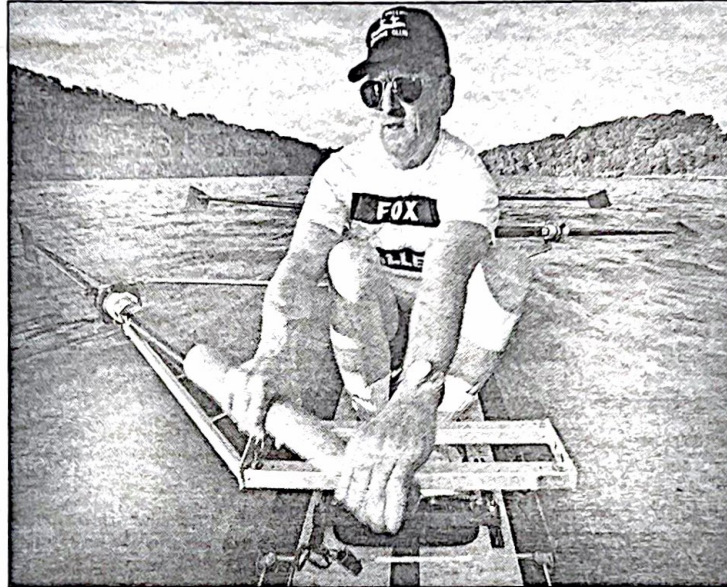
### Shreveport Riverfront Park, Louisiana



The creation of this 5.5-acre green-space in late 1994 marked a renaissance for the community. It transformed an area left abandoned and

neglected years earlier by the oil industry that had moved westward.

A handful of Shreveport officials believed that redevelopment of the waterfront was the key to the city's economic revitalization. Their intensive lobbying garnered nearly \$2 million from a combina-



**FOX VALLEY ROWING CLUB** member Dennis Hendrickson glides down the Fox River in a rowing shell in preparation for an upcoming race with other club members.

Post-Crescent photo by Mike De Sisti

tion of state funds and dedicated tax revenues generated by Harrah's Casino, located a few hundred yards upstream.

The central downtown location of the park puts it in close proximity to the other entertainment-oriented developments such as a convention hall, the Civic Theater, a museum and sports center.

The centerpiece of the park is a 72-foot-wide artificial waterfall which flows outward to extensively planted and landscaped surroundings. Featured prominently in tourism promotions, the park has become a regular site of riverboat tours.

City officials say the park has done more than draw thousands of visitors; it has expanded the public's perception of the waterfront. For the first time, debate is under way concerning the location of new commercial development on the river and the preservation of public access and greenspace.

### Mill Race Park, Indiana



Located on a plain where the Flatrock and Driftwood rivers merge to form the east fork of the White River, Mill Race Park is located on a site

long known as "Death Valley." The nickname stems from the area's swampy, pestilential character; a history of flooding and a background of industrial use.

"It was a cancerous situation," recalled Carl Miske, head of the River Rats, a group that spear-

headed volunteer efforts on behalf of the park. "If we didn't eliminate the cancer, it would spread."

After several failed previous incarnations, the current incarnation of the park was spawned in the mid-1980s.

Of the project's \$8.4 million cost, about \$5 million came from cash donations from community residents, businesses and foundations.

"In this community, you are asked to contribute your time, your money or your talents," summed up Hugh Schumaker, co-chairman of the effort.

The 85-acre park located at the west end of downtown Columbus, Ind., was dedicated in 1992.

The recreation area includes an amphitheater, senior center, "tot lot," basketball courts, covered drawbridge, vine maze, children's play area, tennis courts, tower, restrooms and numerous other features.

The flood-prone character of the site was accommodated in its site design. Drainage was carefully planned to minimize ponding and retention of floodwaters; pathways were made strong enough to resist flood scouring and wide enough to accommodate standard cleaning machines; and off-the-shelf playground equipment was selected because it could be easily replaced in the event of flood damage.

Environmentally, the park's success is clear cut. It has removed inappropriate uses from the flood-plain and rehabilitated lands that had become toxic.

■Source: "Urban Parks and Open Space" by the Urban Land Trust and the Trust for Public Land.

CONTINUED FROM PAGE 66

## Access: River flows away from industry

milling, coal yards and transportation of bulk materials for fuel — are giving way and people are seeing the river as an "amenity," Kiesow says.

"We'll see a transition into new uses as the older industrial uses are either torn down or converted into something else," he says.

### Pressure for residential development will intensify

"There's a reason property values are always higher on rivers or lakes — people have an affinity for it," says Elman, the executive director of the former Fox Valley Water Quality Planning Agency. "Ask 10 strangers if they could move to river or lakefront property for the same cost as the homes they have now, and I don't know if any one would say, 'no.'"

The problem is, there is only so much land available for waterfront homes.

Using the river stretch from Wrightstown to De Pere as an example, Elman notes, "You should see the homes going up. They're very, very, very expensive. Incredible. But they're running out of space for those."

Closer to Appleton, almost all the available residential space already is consumed, Kiesow says.

"As (waterfront) property values become more and more valuable, older homes will begin making way for higher-end residences," he explains. "People are buying older homes and building much larger, much more expensive new ones instead. That's why you're seeing the \$80,000 home next door to the \$288,000 home."

As that trend takes place, however, the "old rich" — determined to maintain their pristine natural surroundings — may find themselves on a collision course with the "new rich" clamoring for space along the river, he adds.

Noticeably absent from the discussion, both Elman and Kiesow agree, are the middle- and lower-income residents — the vast majority of the population — who are financially locked out of consideration.

As a result, it is in the third area of development — recreational uses — that many observers agree the Fox River will find its best hope for renewal.

### The future of the Fox River hinges on the debate over public access

"Many people have no relationship to the river. They have never visited the waterway," Wylie says, noting that private ownership, steep banks and industrialization have kept most residents from experiencing the resource firsthand.

"Look at the number of restaurants in the Fox Cities that are on the water — zip," she adds. "Why is that? Because we need to completely turn around people's mindsets. There is an opportunity here."

Elman agrees.

"You could ask yourself, 'Why would you want to develop the river?'" he suggests rhetorically.



Post-Crescent photo by Mike De Stett

**MEMBERS OF THE** Fox Valley Rowing Club rest after competing in a race on the Fox River near Telulah Park.

"The answer depends on your viewpoint. If you want to make sure it's clean — and kept that way — you need to get people on it. Give them a vested interest in it.

"If not, commuters will continue to simply cross a bridge on their way to work and not give a damn about what's going on down below."

Development of "quasi-public" locations, such as a Paper Industry Hall of Fame or a papermaking museum with a working mill, might offer the most salable destination points, Elman says.

In April, when a consultant to the Fox Cities Convention & Visitors Bureau released survey findings on how to bolster tourism in the area, half of the "short list of potential attractions" dealt in some capacity with the river, including development of a river walk promenade, riverfront festival park and amphitheater, or aquarium/ecological center.

"You need a focus," said a Chicago resident who had participated in a focus group. "But if it was all put together on the river ... it would be unique and I'd rather go to Appleton than fight the attitude in downtown Chicago."

"There's a lot of history up there that we don't have here, like fur traders and all," echoed another Chicagoan. "I think that would be really interesting."

The Fox Cities have not done enough to capitalize on the 140-year-old lock-and-dam system that makes it unique, observers agree.

"There's a wonderful opportunity to make use of the locks sites for picnicking, touring and as historical sites," Kinde said.

"Some communities have no river, some have small ones and some have big ones — but very few areas have a historical lock and dam system," Kiesow echoes.

All the observers — municipal planners and biologists, community advocates and residents — agree that before the Fox River experiences any significant redevelopment, two pivotal questions must be answered:

Who will lead the effort? And who will pay for it?

"Part of the problem is that there is no one for whom river advocacy is a full-time job," Wylie says.

While developers can see the opportunities, Kiesow notes, "due to the scarcity of public access, one municipality may want to consider buying up key access points in an effort to preserve public access and uses."

"Whatever changes come will come gradually," he adds. "I suspect there will probably be less change in the next 20 years than what people might expect. You will see fewer changes than what we saw between 1978 and 1998."

And so, the experts agree, for now and into the indefinite future, the fate of the Fox falls on the shoulders of individuals — like avid oarsman Wurster — who will remain active with the river, spread its reputation and support its expanded use.

"The cities need catalyst organizations," Wurster says. "Recreation is the best hope for this river. People just don't know about it yet."

Wurster and the rowing club are turning their efforts toward bringing a younger generation onto the water. They hope to establish the "Fox Valley Juniors," a team of oarsmen and women drawn from high schools throughout the region.

"The reason we built (our boathouse) so big is that we think we'll fill it up. In five years, you won't be able to walk around in there," Wurster says.

If the youth recruitment plan succeeds, by next summer parents may awake with the dawn to watch their children enjoying the waterway.

**"Look at the number of restaurants in the Fox Cities that are on the water — zip. Why is that? There is an opportunity here."**

**VAL WYLIE, Fox Cities Convention & Visitors Bureau**

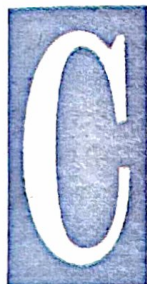
## FOX RIVER TOURISM



# Rebirth of excursion boats, riverside festivals may be the ticket to Fox tourism

By Bill Knutson

Post-Crescent managing editor



lose your eyes and picture a sunny afternoon in August 125 years ago on the Fox River between Appleton and Kimberly.

A gaily decorated excursion boat docks at Peabody Park to pick up more passengers. Music from the onboard band brings folks scurrying down to the river bank.

The captain ties up at Sunset Park, where passengers go ashore for a granddaddy of a summer festival. Picnic. Games. Baseball. Music in the pavilion. Fireworks.

It was the earliest form of tourism on the Fox River. The rebirth of the excursion boat and the riverside festival just might be part of what's needed to make the Fox River a modern-day tourist attraction.

As hard as the Fox River works, if it has a weak spot it is in drawing people from afar to enjoy her potential. That, of course, is not the fault of the river, but of those in charge of marketing the resources of the Fox Valley.

And what a resource the river could be for growing what is a slowly emerging tourist industry in the Valley.

"I believe people are naturally drawn to water," said Appleton Mayor Timothy Hanna. "When people go on vacation, they go to 'the place on the lake,' the cabin on the river or to the beach house. When people want to recreate, they like to swim or fish. If people want to have a picnic, they go to a park or some other open space where there is water," Hanna said.

"So, I think given that tendency, the Fox River has tremendous potential. I've stated many times in the past that the Fox River is one of Appleton's

and the Fox Cities' most under-utilized resources.

Val Wylie, director of the Fox Cities Convention & Visitors Bureau, couldn't agree more.

"If you ask the next 10 people where they went on vacation, most of them would say it was on or near water," Wylie said. "We have that water, but we haven't utilized it well." That's in part because people have not pushed their municipalities toward aggressively capitalizing on the Fox River as a tourist and recreation resource, she said.

Leisure Quest, an Arizona-based recreation/tourism consulting group hired by the Fox Cities Convention & Visitors Bureau, stated in a report last December "...the Fox Cities' ambiance is one of a series of small cities and smaller towns clustered along an unseen river. The 'Fox' in 'Fox Cities' is indeed a river and it does wind through the 'Cities.' Unseen, in that for the most part it is a hidden and pretty much inaccessible resource to most visitors."

Green Bay has only to look at its strategic geographical location combined with its history to be reminded of the importance of the Fox River to its growth and development, including that as a tourist destination.

That largely explains why of the communities bordering the Fox River, Green Bay has done the most to harness the river's tourism potential.

"The geographic location on the river has been a major factor of the Green Bay area's character and development," said Nancy Jones, director of tourism for the Green Bay Area Visitor & Convention Bureau.

"The resources of the area, the water and the land, have continued to provide a powerful attraction to people from all over the world," Jones explained.

Indeed, world visitors will experience Green Bay next Sept. 1, when Hapag-Lloyd's German cruise ship MS Columbus makes a daylong stop. Jones said attempts are being made to recruit more Great Lakes cruise ships to stop in Green Bay.

"Proximity of the Port of Green Bay on the Fox

River to the downtown area, with a variety of tourist opportunities, is of utmost importance to the international visitor," Jones said.

As people have come to realize the Fox River is becoming less polluted, Jones said. "There has been a resurgence of interest in the river as a valuable tourism resource for residents and visitors."

Jones points to the Holiday Inn City Centre's successful marina/restaurant along with the recent addition of other quality dining areas/marinas along the Fox River. There are several new boat launches, she said, and the area now boasts a half dozen marinas along the Fox.

The cleansing of the Fox also has resulted in the emergence of several major fishing tournaments, including North American Walleye Anglers, Jones said.

In addition, several major riverfront development programs are in the talking, planning and construction stages in and around Green Bay, including a project along Washington Street downtown that will include a seven-story office building with a restaurant, a large hotel and an apartment complex and retail shops.

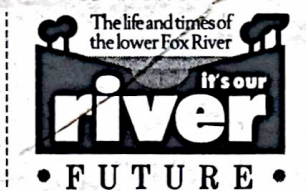
While Green Bay perhaps is more geographically blessed, the Fox Cities need not be left out in the cold when it comes to developing the Fox River as a visitor attraction, Wylie and Hanna assure.

Wylie points to the Leisure Quest report in which it stated a survey of residents and visitors showed development of a "river walk promenade" had consistently strong support.

"...it is perceived as fitting the area's quaint style," consultants reported. "Most consumers envisioned it to include boutiques, cafes, river taxis, restaurants, craft shops, etc."

Likewise, Leisure Quest reported, "it may make sense to consider a riverfront festival park and an amphitheater to be an extension of the river walk promenade."

Excursion boats. Waterfront festivals. Concerts in pavilions along the shores of the Fox. "There's no reason those can't happen again," Wylie said.

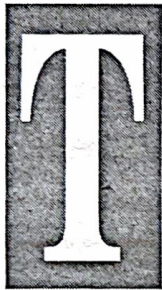


## RIVERTOWN: GREEN BAY

# Communities across United States successfully revitalize waterway resources

By Ed Byrne

Post-Crescent staff writer



he Fox River is more than polluted sediments, fishing and a place to go boating and water-skiing.

The river is also northeast Wisconsin's most direct link to Europe, Asia, South America and Africa.

The commercial docks from the mouth of the river upstream to the Fort James Corp.'s Green Bay mill are the Port of Green Bay. The port has an annual economic

impact of about \$60 million — rivaling the impact of the Green Bay Packers.

In 1997, 1.8 million tons of commodities moved through the Port of Green Bay via cargo ships.

Until the end of commercial boat traffic to Lake Winnebago, the Fox River's economic touch went even deeper into the region, but the Fox River waterfront in Green Bay is still the one thing that makes the city a viable commercial port.

Through the years, the river has been everything from a pristine waterway to an open sewer for human and industrial waste.

Now it is seen as the focal point of revitalizing Green Bay's downtown and no one sees that vision more clearly than Green Bay Mayor Paul Jadin.

Jadin announced, earlier this year, that the city is embarking on an ambitious plan to turn the three downtown bridges — the new Main Street Bridge being named for the late Packer Ray Nitschke, the Walnut Street Bridge, and the Don Tillman (Mason Street) Bridge — into landmarks that will make the Fox River a focal point.

The plan includes spectacular lighting of the bridges.

"That bridge lighting is going to be extraordinary," Jadin said. "You're going to see a new river in October."

There has been a growing sentiment in Green Bay to focus on the river as an aesthetic resource, with some aldermen in the 1980s going so far as to call for the elimination of commercial docks.

"It's a great dream, but it ignores some extraordinary factors, one being that ... the cost of assembling sites and relocating industry on the river is astronomical, really cost-prohibitive," Jadin said. "The other issue at play is do we want to get industry off the river."

"We have a working river, a river and a port that are very viable and that adds significantly to our economy."

The riverfront industries, including docks and warehouses, pay significant taxes and account for 1,100 jobs.

"That begs that the port activities be continued," Brown County Executive Nancy Nusbaum



Post-Crescent photo by Dan Powers

**GREEN BAY'S** Tower Drive Bridge on Interstate 43 serves as a literal gateway as the Fox River empties into Green Bay. The city is involved in a major revitalization plan for its downtown.

## The Port of Green Bay has an annual economic impact of about \$60 million — rivaling the impact of the Green Bay Packers.

said. "Maintaining what we have is the absolute minimum."

"We want to keep industries there, to the extent that they are thriving and happy. Or if we are going to relocate them, we want to make sure there is a place to relocate them in Green Bay, still providing jobs, still contributing to our economy," Jadin said.

Much of the effort to beautify the riverfront has zeroed in on the C. Reiss Company's mountains of coal located on the west bank of the Fox River, just south of the Mason Street Bridge.

"There is a possibility of moving Reiss to another location, where they would still serve Green Bay," Jadin said.

That would open up 40 acres of riverfront property for non-industrial uses.

The focus of Jadin's efforts seems to be moving some of the industrial docks northward, between the Main Street Bridge and the mouth of the river, including the possibility of moving the oil company tank farms from their current sites on the west bank of the river, in the area of the Tower Drive Bridge on Interstate 43.

There should be no doubt about Jadin's commitment to making the Fox River the centerpiece

of downtown Green Bay.

"It is the most critical piece of our downtown plan," Jadin said. "...we have the Main Street program on Broadway, but for the most part, our major new development is going to occur on the river on four or five sites."

All of these sites are targeted for new private development designed to build the downtown tax base, with greenspace around them.

Although all of the commercial port facilities are within the Green Bay city limits, the administration of the Port of Green Bay rests with Brown County government.

Even plans to shift some commercial port facilities closer to the mouth of the river, Jadin feels, will meet with the Harbor Commission's approval because they will not have a negative impact on Green Bay as a commercial port.

Besides industries using the port for the shipment of bulk commodities, Nusbaum believes the port has a future as a destination for passenger ships, with the cruise ship Columbus scheduled to call on the Port of Green Bay next summer.

"There is an emerging industry in Great Lakes cruising, and I believe Green Bay has a great potential," Nusbaum said.

And Nusbaum believes the activities of a working port can also be marketed to tourists.

"The ships and the activities of the ships have their own fascination," Nusbaum said.

She sees no conflict within continuing to grow the industrial uses of the port while the city focuses its downtown renewal efforts using the Fox River as the centerpiece.

## RIVERTOWN: MENASHA

# Menasha banks on the Fox River for its success of downtown revitalization

By Michael King

Post-Crescent staff writer

A

couple times a week each summer, Donald Turner Jr. hops aboard the 19-foot run-about docked in his back yard for a little waterfront therapy.

He likes to fish but, Turner said, "sometimes I just go out for a spin with no big agenda. I like the scenery. There's a certain calmness to it."

Turner, 67, still lives in the same Doty Island home

where he grew up as a boy.

Since retiring a couple years ago as vice president of manufacturing for Banta Co., Turner finds more time to satisfy his passion for being on the water. "We've always had boats and I love to sail," he said.

From his Lake Road home port, Turner can take the Fox River east onto Lake Winnebago or head down river, past the Menasha marina and the many industries which fuel the area's economy, through the Menasha lock and out to Little Lake Butte des Morts.

"Having the lake and the river flowing through the city gives it a lot of character," said Turner.

One thing decidedly different in recent years is the number of people plying the area waters. "There's a lot of boating, certainly more boats on the lake than ever before," he said. "There's many more pleasure craft."

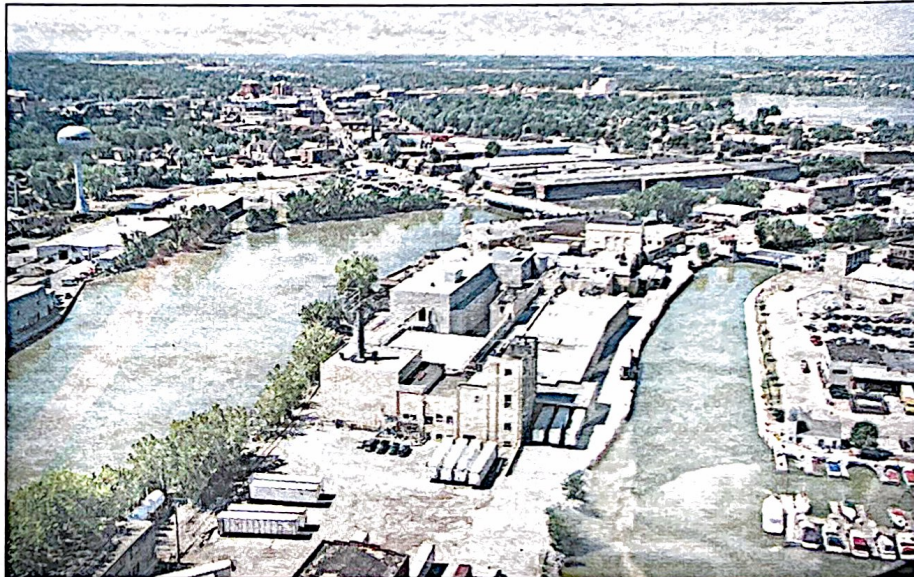
Inclusion of an 87-slip marina in the city's mid-1980s redevelopment effort has contributed to the resurgence in boating and enhanced the downtown, Turner said.

"They ripped down a lot of old buildings and built office buildings," Turner said. "I think the marina is an asset. I think people like boats and like the sight of them even if they don't (go boating themselves). It spruces up the downtown."

Back in the 1950s, when Turner was an adventurous young sailor, he would sail his boat through the Fox locks, to Green Bay and out to Lake Michigan.

"I used to go down the lock and do that. It was fun," he said. "It kind of makes you understand how the communities got started when the waterways were important to the communities before the railroads came in."

Whether the locks should be reopened, Turner is undecided. "I don't know. It's really a tough subject. Certainly it's a nice thing to have but then you relate the cost of it with keeping all those locks open with the use," he said. "That's a tough nut. Obviously we'd all like to see the locks open. But,



Post-Crescent photo by Mike De Sisti

**THE INCLUSION** of an 87-slip marina (bottom right of photograph) in Menasha has been a major contributor to the resurgence in boating and has enhanced the city's downtown appeal.

**"Our whole downtown focus  
has been on revitalization of  
the waterway."**

JOE LAUX, Menasha mayor

how do you pay for it?"

Due to its location between two lakes, Turner believes the Menasha lock "will probably always stay open. That one is used a lot."

"I don't see that lock closing down. But the ability to go from Menasha to Green Bay is another issue," he said.

Having the marina downtown and boats passing through the city provides a pleasant atmosphere for a community, Turner is convinced most residents "like to see boats going on the river. It kind of adds to the community."

Mayor Joe Laux, who has been in office for the past 10 years, believes the city is well on its way to reclaiming its waterfront.

"I don't think there's any question that it's a key to the vitality of the community," said Laux. "In every single aspect of our lives, whether you're talk-

ing about jobs or quality of life.

"Our whole downtown focus has been on revitalization of the waterway," Laux said. "Everything we've been doing has been focused on the river, one way or another. There's no question it's of huge importance to us."

The river has had an impact on the city's economy, Laux said. Wisconsin Tissue, the city's largest employer, needed the river several years ago to bring in a huge dryer on a barge via the locks. The multimillion expansion added hundreds of jobs to Wisconsin Tissue's already sizeable payroll.

Menasha and other communities in the area grew up around the industries which harnessed the river's water power to turn machinery and transport goods until the arrival of railroads.

"Look at how many jobs are in Menasha are just along the river," said Laux, ticking off the names: Wisconsin Tissue, Fort James Corp., American National Can, Banta Corp., Gilbert Paper, Whit- ing Paper.

"Look at all the jobs that are along the river," Laux said. "It's just incredible the economic vitality that is tied to the river."

"Without the Fox River, I don't think we'd be here," Laux said. "I don't think the valley would be here without the river. We grew up around the river."

## FISHING SHANTIES

# Slice of Fox River history or eyesores? Fishing shanties keep stubborn existence

By Ed Lowe  
Post-Crescent staff writer



ike their support beams and their floors, the last remaining fishing shanties on the Fox River in Oshkosh are giving way.

It's either sad or belated, depending on which side you stand on the matter of their stubborn existence, which divides Oshkosh much like the river itself.

"No more river stories," warns Chet Tollard, a longtime semi-resident of the van-

ishing scene. In this town, that makes him one of the "river rats."

Three years ago, then-City Manager Bill Freuh announced his intent to eradicate the eight remaining shanties huddled on the south bank of the river at the end of Michigan Street.

An eyesore, he said.

After the resulting firestorm, it's been quiet. And, from the vantage point of Tollard's favorite fishing spot, quiet is good.

"People aren't bothering us about getting out of there any more," Tollard said. "I don't want to start anything up again."

The city has taken a less confrontational approach to the shanties in the past few years, tidying up the adjacent river bank area, much of which was railroad property until purchased by the city in 1993. Now the area is part of William Steiger Park.

The abandonment of the railroad line allowed the city to add some modest amenities, including, a large gravel parking area, a picnic table and trash receptacles.

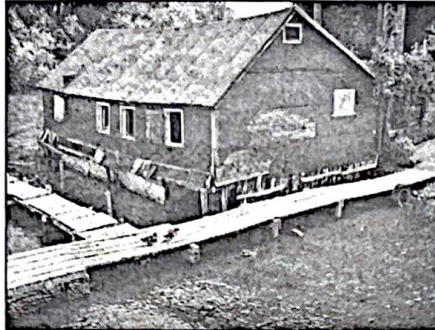
The improvements signify city ownership of the land, but the city has yet to disturb the structures built upon pilings and linked to land by catwalks.

Among the best of the lot is one Butch Whitty bought in a barroom transaction for about \$450 in 1960. The roughly 10-foot by 12-foot box was built in about 1945, when about 60 structures of the type were built atop the river.

"I'm the third generation of my family to use the shanties," said Whitty, at 59 relatively young for an original river rat. "I'm one generation down from the old guys and there ain't too many of the old guys left."

Whitty says he was about 9 when his uncle, who then lived in a three-room home built on pilings, caught him "sneaking around" the river bank area. The uncle demanded the boy prove his ability to swim across a channel and back before being allowed to stay. When the boy completed the test, his uncle declared him worthy to join the river rats.

A half century later, the area remains much as it was then — a fishing paradise amid a crowded city — Whitty said.



Post-Crescent photo by Mike De Sisti

**WEATHERED FISHING** shanties, like this one owned by Butch Witty of Oshkosh, maintain a stubborn existence on the river's south bank.

**"When you look at the older generation on the south side of Oshkosh, most of those people are connected with the shanties in some way."**

**BUTCH WITTY, who bought his fishing shanty on the Fox River for \$450 in 1960**

In 1980, the city tried to roust the river rats, posting orders to vacate on the shanty doors and ordering the utilities cut off, Whitty says.

"Apparently, the city broke a lot of rules," Whitty said. "After that they backed away from us. I'm sure we'll be there after the turn of the century at least."

It seems a modest hope, one befitting the circumstances the shanty owners have always known.

"It's always been kind of up in the air over there," Whitty said. "But now they've been there so long that they've kind of become part of the city's heritage."

"Just about every man or boy relates to them — a place where you can put your line in the water, kick your feet up, tell a few jokes and maybe have a beer."

He says the fishing was much better a decade ago, before the outboard engine testing at Mercury Marine peaked and transformed Whitty into an environmental activist of sorts.

Too many motors, too much carbon monoxide, too many dead fish, he asserts. And the plant's high-performance motor tests created eddies so large they spanned the river.

"It was just horrific," Whitty said. "It was like the water was boiling underneath my shanty."

It's been quieter since Mercury curtailed much of the plant's production. And the fishing has rebounded some, Whitty said. Now the shanties again seem more threatened than the white bass and catfish that call the river home.

A medical office development lies a few hundred feet from Whitty's shanty door. A developer has installed curb and gutter, threatening to bring new development much closer still.

If that happens, "I would put up a wall or a pretty fence so I wouldn't have to look at those buildings," Whitty said.

That assumes the city ignores the shanties in the meantime.

The city appraised four of the shanties in apparent preparation of a buyout a few years ago, but it appears the city now has bigger fish to fry.

"That's nothing the (city) council wants to deal with at this time," said Oshkosh City Manager Richard Wollangk. "I'm sure we'll be revisiting that issue sometime in the future."

Oshkosh City Atty. Warren Kraft said the city has been given two of the most dilapidated of the shanties and will eventually remove them.

Some of the others, built adjacent to land formerly owned by the Wisconsin Central Ltd. and leased by the railroad, are only awaiting action by the city.

"The city is the new landlord, and we've chosen not to renew those leases," Kraft said. "The leases are already up."

Three or four other shanties that were built decades ago on land that was never leased will have to be purchased by the city before they are removed, Kraft said.

"I took the (legal) position that those shanty owners had some sort of property rights ... commonly referred to as squatters' rights."

When the time comes, the city will again appraise those properties and possibly the others, negotiate with the owners, then buy and remove them.

No one knows when the ax will fall, but it won't fall quietly. These shanties have been known to generate strong emotions among people who have never caught a catfish.

"When you look at the older generation on the south side of Oshkosh, most of those people are connected with the shanties in some way," Whitty said.

"During the Depression, that's where a lot of people got the food to feed their families."



## FARMING ALONG THE FOX RIVER

# Farms along the Fox remain a stark exception to rapid residential development

By David Horst

Post-Crescent city editor

Wrightstown

**I**t's a question Norb and Sharon Vander Linden tired of long ago. "Why don't you sell to a developer?"

The Vander Lindens' farm, Fox View Dairy, is perched on a high bank of the Fox River along Brown County D, right in the path of the march of million-dollar homes working its way upstream from Green Bay.

Their farm, which they bought from Norb's parents in 1967, stands as a stark exception to the

development ballooning the value of riverfront property.

The dairy farm houses a herd of 65 along about 4,700 feet of river frontage.

"Everyone says we're crazy, that we should sell the land," Sharon said.

People stop regularly to ask about buying some of the land.

"Then we tell them what it's worth and they go the other way," she added.

Given the view, no wonder interested buyers are regular visitors.

The cow pasture covers a bluff with a sweeping view of the river up to Wrightstown and down toward Apple Creek. There's room for a deep and secluded lot between the highway and the river, unlike the narrow strip of land left by County ZZ on the east bank.

It's a view Norb admits he tends to take for granted when he's busy with daily chores.

The Vander Lindens own 140 acres in all, most of it across the highway. Norb takes pride in saying it's the only working dairy farm on the river between here and Kaukauna.

Why not sell?

"It's our profession and we like to do it," Sharon said of dairy farming.

They could take the money and buy land elsewhere, but they're not at the age to think happily of starting over. They don't know yet if their son might want to take over the farm when they're ready to retire.

A short drive to the north, seven-figure mansions housing top executives of Green Bay businesses make use of the river view. Asked what she thinks of her relatively new neighbors' homes, Sharon responded, "I think they're nuts." They pay \$200,000 for a couple of acres even before they start to build the house, the practical farm wife pointed out.

Across the river, Elton Krueger, 77, lives almost literally in the shadow of the new development. His simple but attractive brick ranch-style home

**"I saw that river go from a nice river to what it is today. Now there's not even a frog in that river, not even a turtle. ... It's like a sewer. Sewers don't freeze."**

ELTON KRUEGER, a Wrightstown farmer who lives near a residential development

stands amid towering, mature trees on a five-acre remnant of what was a 120-acre family farm. Behind his lot, the land rises up to what has become Moon River Estates, upscale houses with a striking river view.

Krueger said he farmed that land all of his life, until 25 years ago when he had open-heart surgery and couldn't anymore. He sold the land, watched the developers burn down the house where his mother gave him birth and blast the silos. Sprawling houses rose up where he once cut hay with a team of horses.

"I never dreamed there would be that many houses going up," he said.

The economics dictate there will be more.

Bill Dean of ERA Titletown Realtors, one of the agents selling property in the five-year-old development, said the lots are selling a little slowly right now because they are right in the middle between Green Bay and Appleton. Development is still working its way down. Speculation about Brown County buying 150 acres for a landfill nearby hasn't helped either.

The river between here and Green Bay is bordered by a line of million-dollar houses, he said, "many, many, many of them."

Homes being built in Moon River Estates run \$300,000 to \$1 million, Dean said.

Riverfront property is a valuable commodity. These lots have mound systems and private wells,

but he said in all of Brown County there is only one lot on the river with city utilities for sale. It has 117 feet of river frontage and is listed at \$289,900, without a building.

One lot just north of Moon River was the highest value land sale in Brown County in two years — more than \$1 million for 52 acres. A retiree is building one big house there.

Even up in Moon River, across the highway from the Fox, having a river view adds about \$50,000 to the value of a lot, Dean said.

Like the Vander Lindens, Krueger is baffled by the land values, and not at all pleased to see the development.

The neighbors all seem too busy to be neighborly, not like the days when farmers stopped their tractors at the fence line and chatted for half an hour. He also is concerned what all of those mound systems could do to the groundwater.

He was treated fairly in the land deal, Krueger acknowledges, "but that doesn't mean I have to like it."

He reserves his stronger feelings for what's become of the river. He recalls as a boy water filled with fish and a chorus of bullfrogs filling the summer night.

"I saw that river go from a nice river to what it is today," he said. "Now there's not even a frog in that river, not even a box turtle."

Out here where they used to cut ice for home use, the river doesn't even freeze over anymore, he complained.

"It's like a sewer. Sewers don't freeze," he said.

Discounting claims that chemical runoff from farms is the problem, he blames the paper companies and supports them being forced to pay for a cleanup of the PCBs in the river.

"(The paper companies) say that will put them out of business," Krueger said. "Tough, they did it."

Pollution is not nearly new to the river. Krueger remembers fish kills 65 years ago that made the river white with the bellies of dead fish. That was before the first round of the paper industry's effort at cleaning up the river, dealing with dumping that fed bacterial growth and robbed the river of oxygen.

The river was hard at work in Krueger's childhood. He remembers watching two or three coal barges a day hauling 275 tons each from Green Bay to Oshkosh.

Boys at his school would run to the river at lunch when they heard the blast of a boat whistle, and then walk on the tops of the lock gates that still hold back the water to let today's recreational boaters through.

Time, growth, development, pollution have all changed the Fox River over a lifetime of 77 years. But Krueger is still drawn to it as much as his neighbors in the high-priced houses.

Easily explained.

"It's just a beautiful place to live," he said.

## SUPERFUND

# In the beginning, federal laws focused primarily on visible pollution problems

By Bob Vitale

Post-Crescent Washington bureau  
Washington

W

hen pollution became a national concern and the state of the Fox River became a local one, few people worried about an invisible thing called polychlorinated biphenyls.

Back then, federal laws and local efforts focused mostly on visible problems, and the Fox had plenty: raw human waste discharged by area sewage plants, masses of pulp spit

out by the region's paper mills, tires, appliances, whatever people felt like tossing in.

And the idea of dealing with pollution was simple.

"If you stopped putting it in," recalls former Wisconsin Sen. Gaylord Nelson, who helped shape much of the nation's early environmental legislation, "the idea was the river would end up being clean."

In 1972, Congress passed a Clean Water Act that set a goal of eliminating chemical and waste discharges into the nation's rivers and lakes and making them safe for fishing and swimming by the mid-1980s.

Much of the bill's \$24.7 billion price tag was set aside for helping communities build wastewater treatment plants. Another bill signed into law by President Richard Nixon stopped unregulated waste dumping into the oceans and Great Lakes.

By the late 1970s, the Fox River and many others were in much better condition — "a lot of this visible and gross pollution was cleaned up," said Rebecca Katers of the Green Bay-based Clean Water Action Council — but the unseen problem of polychlorinated biphenyls was becoming more visible to federal officials.

Earlier in the decade, the federal government had banned the manufacture and sale of PCBs, an industrial compound used by the paper industry and many others.

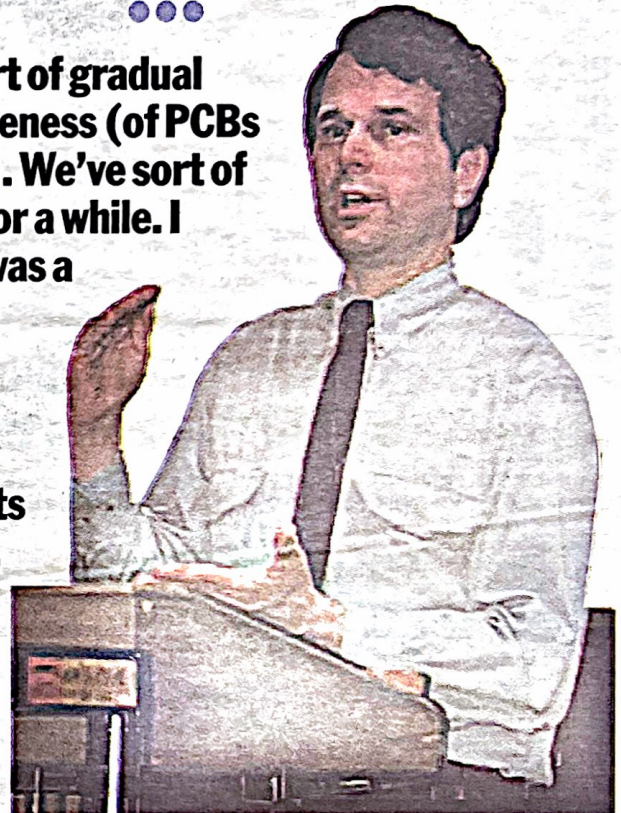
The 1976 Toxic Substances Control Act included provisions that required testing on new industrial chemicals to determine their effect on humans and the environment.

That same year, the first government advisories were issued telling people to avoid eating certain species of fish caught from the river.

Still, many thought chemicals such as PCBs eventually would wash out of the river, into Green Bay and out into Lake Michigan where they would dissipate naturally.

**"There was a sort of gradual increase in awareness (of PCBs in the Fox River). We've sort of been watching for a while. I can't say there was a time a lightbulb came on. ... We wanted to let the voluntary approach work its magic. EPA said, 'We'll let the process take its course.'"**

JIM HAHNENBERG, a  
geologist with the U.S. EPA



Few realized they also settled into the river's bed, accumulated in its sediment and were ingested by its fish and wildlife and eventually its human neighbors.

"There was a sort of gradual increase in awareness," said Jim Hahnenberg, a geologist with the U.S. Environmental Protection Agency. "We've sort of been watching for a while. I can't say there was a time a lightbulb came on."

By 1986, after the Wisconsin Department of Natural Resources had already been studying and monitoring Fox River PCBs for years, federal officials identified the river as an "area of concern" during an inventory of Great Lakes pollution sources conducted in cooperation with the government of Canada.

Although the federal government gained new powers in 1980 to force environmental cleanups and make those responsible pay for its efforts, the EPA by and large still stayed away, however, letting the state take the lead in developing a cleanup plan

with the seven area companies found most responsible for the river's PCB problem.

The river didn't rank high enough under criteria used by the agency to determine whether a polluted site should come under jurisdiction of its new Superfund program. EPA also was content to let Wisconsin officials and the area companies come to an agreement on their own.

"We wanted to let the voluntary approach work its magic," Hahnenberg said. "EPA said, 'We'll let the process take its course.'"

In the last year or two, however, federal officials became increasingly frustrated with a lack of progress, and a change in Superfund criteria put the Fox River within the range of Superfund status.

EPA's announcement in June that it would formally consider adding the river to the program's National Priorities List has sparked a new federal review to determine the extent of its PCB pollution.

A decision on Superfund will take up to a year.

**SUPERFUND**

# Want a scorecard to keep track of the players in the river cleanup? Forget it

By Ed Culhane

Post-Crescent staff writer



One victim of Fox River pollution is the area resident who tries valiantly to keep abreast of the proposed cleanup.

This luckless citizen has been shelled by a scatterburst of government agencies, bombed by reams of technical data, misdirected by political intrigue, snowed by spin doctors and tortured by the endless repetition of bureaucratic anachronisms.

Government regulators have gone so far as to pass out translation sheets to people attending meetings so they can attempt to navigate the multilayered maze of government regulations and their attendant terminology.

As a litmus test, consider the following anachronisms: HRS, SARA, NPL, CERCLA, FWS, NRDA, RI/FS, PRP, ROD, RAP, STAC, CWAC, IJC, AOC. All of these refer to important players and processes in the Fox River cleanup, and most have been referred to repeatedly at public meetings.

If you can't define most of them, don't worry.

How about asking a simple question? Like who's in charge of the cleanup?

The politically correct answer to the question is that under an agreement signed with much public fanfare in February 1997, the cleanup is being managed by a group of six governmental partners: the state Department of Natural Resources, the U.S. Environmental Protection Agency, the U.S. Fish & Wildlife Service, the National Oceanic & Atmospheric Administration, and the Oneida and Menominee tribes.

To this list must be added the Wisconsin Department of Justice and the U.S. Justice Department, the legal muscle behind state and federal regulators.

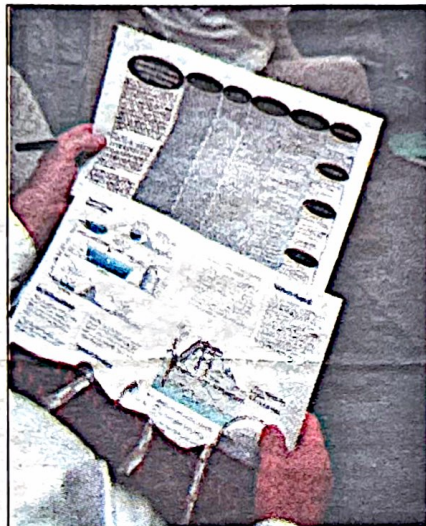
"Together we will clean up the river ... and make it a safe and healthy place once again," said Bill Hartwig of the EPA when the agreement was announced.

Under the agreement, the cleanup will be managed by a committee with all six parties represented.

If the committee becomes deadlocked, it will be resolved by a Consensus Committee made of six members. (Two from the DNR, one from the state Department of Justice, one from the U.S. Department of Justice, one from the EPA and one from the FWS, which will also represent the two tribes and the NOAA.)

As such, three of the six members who hold final authority are from the state.

You might conclude from this list that the tribes



Post-Crescent photo by Kristyna Wentz-Graff

**FROM NAMES** to anachronisms to terms, the river cleanup is an alphabet soup of confusion.

and NOAA are minor players. We won't argue. You might also read this to mean that the state has the upper hand, but this is misleading.

The intergovernmental partnership has a limited lifespan, and to the extent that it may be meaningful, it has meaning only if a negotiated agreement is reached between these partners and the seven companies, known as the Fox River Group, which are being asked to pay for the cleanup.

The companies in the Fox River Group are: P.H. Glatfelter Co., Riverside Paper Corp., Appleton Papers Inc., Fort James Corp., U.S. Paper Mills Corp., Wisconsin Tissue Mills, and NCR Corp., a former owner of Appleton Papers.

The EPA still holds the trump cards, which are contained in federal law, and EPA officials have said repeatedly that they will not negotiate remedies to the Fox River. Any proposed solutions must meet their legal standards or the fight will move to the courts.

OK, you say, but who is really in charge?

It appears the DNR is leading the cleanup effort while the EPA tags along, like an unwelcome older brother who holds the keys to the car.

Right now, the two agencies appear to be working well together. The DNR, which has been researching the cleanup for more than 10 years, is conducting the feasibility study under a \$1.6 million grant from the EPA. The EPA has also taken the unusual move of granting the DNR authority to designate a state-certified landfill to accept PCB-contaminated sediments.

Two environmental dredging projects in the Fox

River, scheduled to get under way this fall, are both being managed by the DNR. One is financed by the paper companies, the other by the federal government.

As for the Fish & Wildlife Service, this agency's role has been to assess the damage done to natural resources by paper company discharges and to place a dollar figure on those damages.

This project, called a Natural Resources Damage Assessment (NRDA), plays a critical role in federal legal proceedings, should any be initiated.

The FWS has not been a highly visible player in the cleanup, but in fact, it arrived on the scene 10 years ago and has played a pivotal role in the unfolding drama.

At first, the FWS and the DNR worked together, laying the groundwork for a joint NRDA. In 1991, two dozen DNR employees attended an NRDA training session conducted by the service.

That same year, the EPA approached the DNR about the possibility of using enforcement authorities (i.e., the Superfund law) to motivate a Fox River cleanup paid for by the paper companies.

Internal DNR memos indicate that in 1991, clearance was sought from Gov. Tommy Thompson to launch an NRDA, an outcome the paper companies opposed.

Soon after, FWS officials said, the DNR expert on NRDA was reassigned and the initial NRDA organization dissolved.

In 1992, the DNR announced the formation of the Fox River Coalition - a partnership between state and local governments and the seven companies - and thousands of dollars were spent publicizing it. The idea was that government and industry could work toward a common goal and that years of litigation could be avoided.

The Fox River Coalition still exists, on paper, but most observers of the cleanup have written the coalition off as a failed experiment. Why it failed is in dispute.

Environmentalists charge that the coalition was a delaying tactic by a pro-business governor, allowing the companies to hold off state and federal lawsuits for years.

DNR officials argue that the coalition was moving forward with cleanup plans when the EPA announced its intention to propose the Fox River as a Superfund site, starting the legal machinery of the federal government and robbing the paper companies of any motivation to proceed.

Bruce Baker, a top DNR official, said that contrary to popular perceptions, the coalition made progress. Because the paper companies insisted that any proposals be backed by the latest research, a detailed analysis of river sediment was combined with complex computer models that predict how river flows disperse the contaminants.

It is because of this work, Baker said, that the feasibility study on the cleanup will soon be complete.

## SUPERFUND

# Critics have long dumped on Superfund program as symbol for pollution out of control

By Bob Vitale

Post-Crescent Washington bureau  
Washington



Created by Congress in the aftermath of Love Canal, the national Superfund program has built a name almost as dreaded as the neighborhood-turned-chemical dump that became a symbol for pollution out of control.

From its earliest days, the federal program designed to clean up the worst pollution problems in the nation has pleased few people, if any.

When it was approved in 1980 and signed into law by President Jimmy Carter a month before he left office, environmentalists said it wouldn't do enough to clean up toxic waste sites and hold polluters responsible.

Industry called it a bad precedent and a new layer of federal bureaucracy.

Eighteen years later, they're saying the same things about the Environmental Protection Agency program.

"It literally takes longer for EPA to clean up one Superfund site than it did for our country to put a man on the moon," Rep. Michael Oxley, R-Ohio, said earlier this year in announcing congressional hearings into the program. "You can raise a child from birth to adulthood in the time it takes for a Superfund site to go from discovery to completed cleanup."

Said former Wisconsin Sen. Gaylord Nelson, an environmental champion: "It needs substantial revision."

Superfund is the program EPA is considering extending to the Fox River in an effort to speed up the cleanup of PCBs released by area paper companies until the chemical was banned in the 1970s.

Under Superfund, the federal government would have the power to move forward with the cleanup — on its own, if it deems necessary — and send along the bill to the seven companies that are responsible for most of the PCB contamination.

The program has never been that simple, though.

A General Accounting Office study showed that sites added to the Superfund's National Priorities List in 1996 had been under consideration for the program an average of nearly 9 1/2 years. Cleanups have taken more than 10 1/2 years on average, according to another GAO study.

While EPA officials claim a growing record of success — the number of completed cleanup projects has grown dramatically over the last five years, it says — critics say too much of the job remains undone.

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**"It literally takes longer for EPA to clean up one Superfund site than it did for our country to put a man on the moon. You can raise a child from birth to adulthood in the time it takes for a Superfund site to go from discovery to completed cleanup."**

REP. MICHAEL OXLEY, R-OHIO, offering his views on the federal program that was designed to clean up the worst pollution problems in the United States, but, since its inception in 1980, has impressed few people, if any

Too much of the program's time and money, even its defenders agree, is spent on lawsuits between EPA and those on the hook for cleanup costs.

"There's too darn much litigation," said Nelson, who like many wants to see the program changed.

The problem is, few agree on exactly what needs to be done.

Oxley, chairman of the House Commerce sub-

committee that oversees hazardous waste issues, has introduced legislation with an equal mix of Republican and Democratic backers that sponsors say would keep the program's "polluter pays" philosophy while ensuring EPA makes cleanup decisions based on sound science and cost-efficiency.

It is supported by the National Federation of Independent Business and has one Wisconsin co-sponsor, Rep. Scott Klug, R-Madison.

Another bill, introduced by Rep. Sherwood Boehlert, R-N.Y., chairman of the House Transportation subcommittee that deals with environmental issues, would also address concerns about excessive litigation, input from states and local governments and other issues.

It is endorsed by the National Governors Association, the National Association of Manufacturers and Wisconsin Reps. Tom Petri, R-Fond du Lac, and Jim Sensenbrenner, R-Menomonee Falls.

Republican leaders, however, are looking for a broader consensus on Superfund reform before moving forward with final legislation.

Petri, who was a first-term member of Congress when the original program was developed in 1980, said, "I had no way of knowing it would be this bad."

"It's ended up being a flawed design," he said. "In their effort to throw the cost on the backs of polluters ... it has led to people litigating and refusing liability and not getting the job done."

Petri said he would have preferred a Superfund program paid for as a large public works program, funded not by polluters directly but from a tax on chemical producers that was its original source of funding.

Like the reforms that have been in the works for three years running, the first Superfund legislation took some time to hammer out as well.

After the 1977 discovery of Love Canal, a Niagara Falls, N.Y., neighborhood that was evacuated when toxic waste began seeping into residents' basements, Congress took three years to study the problem and develop what it hoped was a solution.

A 1979 study found 3,383 chemical dump sites around the country, some beneath tennis courts and church parking lots, a yacht club, a cemetery and a botanical garden, among other sites.

EPA said up to 2,000 sites nationwide fell into the dangerous category and claimed 90 percent of waste generated at the time was being dumped unsafely.

Superfund, known officially as the Comprehensive Environmental Response, Compensation and Liability Act, began with a \$1.6 billion pot that came mostly from chemical and oil companies.

It was first implemented by the Reagan administration, and its officials were criticized as too close to industry and too lax on enforcement.

In the last six years under Clinton administration officials, the program has been criticized as too focused on punishing industry with expensive, unproven cleanup methods.

## SUPERFUND

# A primer on the various techniques to attack and kill PCBs in the Fox River

By Ed Culhane

Post-Crescent staff writer

**L**et's say you have located a PCB and you have decided to get rid of it.

No problem.

To kill it, find a furnace that can generate 3,000 degrees Fahrenheit, toss in the PCB and in three minutes you can type up a eulogy.

Back at the furnace, the two, connected carbon rings and the highly charged chlorine ions that were sticking to them with mindless devotion

have been ripped apart by the intense heat.

The freed carbon and chlorine atoms have flown up the chimney and are riding on the winds, ready to claim their cosmic birthright as building blocks of the natural world.

Much of the carbon, for instance, will join oxygen atoms to produce carbon dioxide, which will be taken in by trees and other plants as part of photosynthesis.

Or maybe your PCB is sticking to some mud that contains other bad things, like mercury or lead, and these won't be killed by fire.

So instead of killing the PCB, you decide to lock it up.

Simple. Put the PCB next to a soil particle and the oily little molecule will stick to it. Put the soil particle in something that won't leak (in case any solvents come by) and that won't come open.

But now we must imagine that there are more PCBs, more than the biggest computer in the world could count, that there are so many of these molecules that their combined weight would crush your home and your garage and that these legions of PCBs are mixed in with, and are sticking to, tons upon tons of wet mud, in all kinds of formations, containing a laundry list of other toxins, on the uneven bed of the lower Fox River - all 39 miles - with a powerful waterway, full of living things, surging inconveniently overhead.

Now you have a problem.

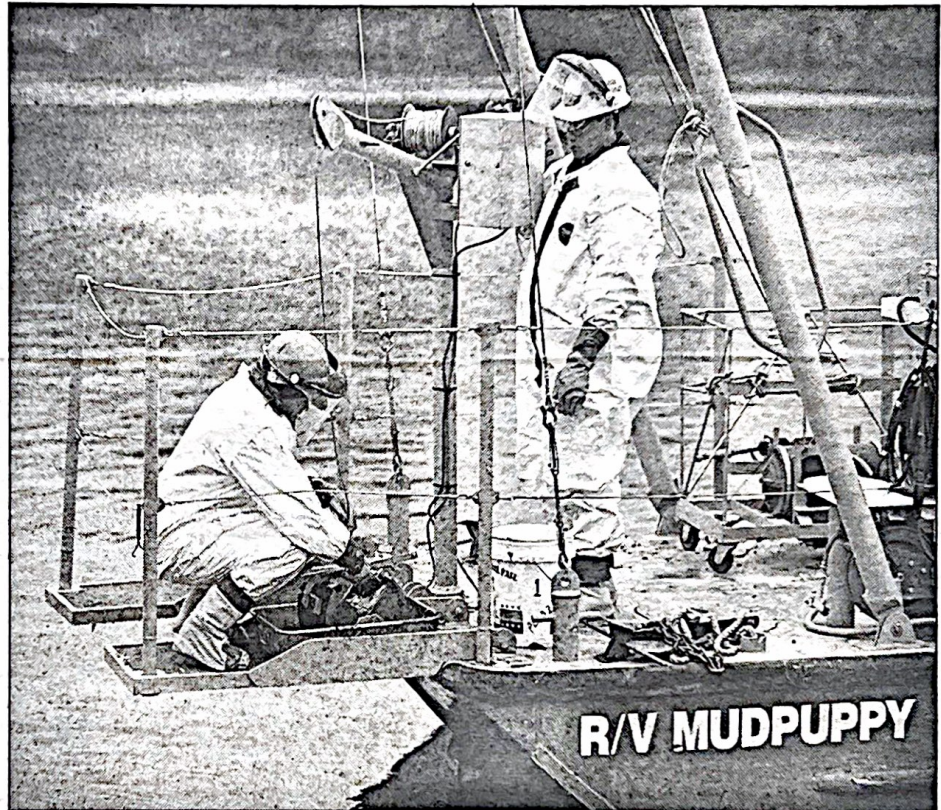
No way to kill or imprison them all. Now you think about risks. To leave all the PCBs in place, by the weight of the evidence, is too harmful to living things.

So you spend more than \$25 million on research, you figure out which sediments are the worst culprits and you go after the PCBs in them.

But you are still faced with the problem of the river. There are two basic approaches to this predicament. Deal with the PCBs where you find them (in situ), or get them out of the river and then deal with them (ex situ).

### IN SITU

To deal with them in place, you have three



Post-Crescent file photo

SCIENTISTS PERFORM PCB test dredging earlier this year on the Fox River.

options:

■ Moving the river, so it no longer flows over the contaminants. Don't laugh. This has been done.

At Cedar Creek near Waukesha, where the furthest upstream impoundment was loaded with contaminants, engineers diverted the creek. But in this instance, moving the channel was simply a means of getting at the contaminants anyway. They let the old channel bed dry and then went after it with standard earth moving equipment, sending the sediment to a EPA-licensed, toxic waste landfill.

For obvious reasons, this won't work anywhere along the Fox. It's just too big.

■ Capping is a technique that involves placing clean sand or gravel over the contaminated sediments. In areas of turbulent water, the cap can be armored with heavy rocks, a flexible blanket of concrete held together with cables or a high-tech, plastic-like sheet called a geosynthetic barrier, or some combination of these.

This technique has been used in the Sheboygan

River.

Engineers worry about the long-term effectiveness of caps, however, and caps require long-term monitoring and maintenance. Caps are not appropriate in some river environments, as in shallow water where you would effectively be filling in the river, or in navigation channels (which run the entire length of the lower Fox) where they would preclude any future dredging to maintain channel depth.

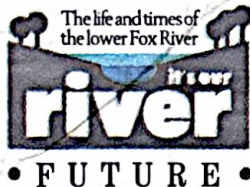
As for the Fox, capping is likely to play a minor role.

"If you rule out all the areas that don't meet the criteria for capping, it isn't a huge part of the river that's left," said Bob Paulson, an environmental toxicologist with the state Department of Natural Resources working on the Fox River cleanup.

■ In-place treatment. There are four types: biological, chemical, thermal and immobilizing.

Biological treatments involve injecting PCB-eating micro-organisms into the sediment. Although

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## SUPERFUND

# Primer: How to attack Fox River's PCBs

such bugs do exist, the technology is lacking. At Sheboygan, the EPA tested it by removing sediments, putting them in a tank and tossing in the bugs under ideal conditions.

"That sediment is going to a TSCA (toxic waste) landfill because the PCBs didn't go away," Paulson said. "If I can optimize my conditions by dealing with it out of water, think about trying to get that same optimization six feet under the water. It's impossible."

There are chemical agents that are said to break down PCBs, but they are neither proven nor commercially available, and the chemicals themselves could in some cases be considered pollutants. Also, there are no chemicals that destroy mercury or other heavy metals in the sediments.

Immobilization involves mixing the sediments in place with binders, including cement, in order to lock up the contaminants. This technique was tried by a utility on a limited scale in the Manitowoc River with less than stellar results. Oil was forced out of the mixture, causing a slick, and the mixed sediments did not sufficiently harden.

In any case, it is not applicable to large areas.

Thermal treatment of underwater sediments, which involves heating them with radio waves, has not been shown to work.

### EX SITU

First you take the sediments out of the river, either by mechanical dredging, dry removal or hydraulic dredging.

■ **Mechanical dredging**, with the big clamshell bucket, is the cheapest and fastest means, but it could roil the sediments, including buried hot spots of contamination, and until the work was done and the river settled, fish and wildlife would be exposed to significantly greater doses of contamination.

■ **Dry removal** involves building a coffer dam around a near-shore sediment deposit, drawing off the water (which would have to be treated) and then using standard earth moving equipment to remove the deposit. It would be impossible on the large, diffuse deposits downstream of the De Pere dam.

■ **Hydraulic dredging**. This is the method clearly favored by both federal and state regulators. Area residents will soon witness this technology at remediation projects this year at Deposit N near Kimberly and at site 56-57 below the De Pere dam.

Suction tubes near the dredge cutter head will draw off the sediments, and are designed to eliminate or minimize resuspension of contaminated sediments in the river column. Protective screens will be stretched around the dredging and anchored to the river bottom, to capture any sediment that does escape.

The paper companies involved in the Fox cleanup have disputed the conclusions of DNR and EPA scientists that hydraulic dredging controls resuspension, and they have produced a study by their consulting firm, BBL, on hydraulic dredging at Manistique, Mich. BBL concluded that in some areas where hydraulic dredging was used,

concentrations of PCBs in the surrounding water or sediment increased by five times.

The EPA has rebuked the BBL report, challenging its methods and conclusions. BBL engineers have defended it. In response to these assertions, EPA regulators showed a video of underwater dredging at Manistique in which there appeared to be no resuspension.

"Virtually no PCBs have been released during dredging activities in the (Manistique) river and harbor," said Jim Hahnenberg of the EPA's Region 5 office. "We are achieving good results."

Hahnenberg said sediment removal has become a common practice and has been shown to reduce PCB concentrations in sediment by an average of 50 fold, and total amounts of PCBs by up to 98%.

Paper company officials point to other areas of the country where dredging has been rejected in favor of other strategies and to areas where proposed dredging projects are unpopular with residents.

A clear downside to hydraulic dredging is that it draws off huge amounts of contaminated water which must be treated on site before being returned to the river. Although treatment would remove the vast majority of contaminants, it would fall short of federal and state clean water discharge standards and will require the equivalent of a waiver from those standards.

**Treatment:** If you do decide to dredge, you must treat or contain the contaminated sediments.

Many of the technologies described above for treating sediments in the river (chemical, biological, immobilizing) could come into play again, but will likely be rejected as being unproved, ineffective or simply unworkable.

Two thermal technologies, however, have stirred the interest of scientists and environmentalists.

One is thermal destruction. The sediment is incinerated, using large amounts of energy at a huge cost, destroying the PCBs. The difficulties of burning sediments are immense, however, and the process does not destroy mercury. This would involve the construction and siting of an incinerator fitted with expensive air pollution controls.

A more promising technology, called thermal desorption, involves heating and mixing the sediments in a chamber that volatilizes the contaminants in steam. This steam is then condensed into a liquid which can be more easily incinerated than sediment.

The idea is attractive, since in theory it could eliminate the landfill problem. In some tests, the process has been shown to destroy 90 to 95 percent of the PCBs.

But like many of the experimental technologies that are on the table, problems with thermal desorption occur when you take the process out of the lab and into the field and scale them up.

William Fitzpatrick, DNR's project leader for the Fox cleanup, said thermal desorption was used for portions of the PCB cleanup at Waukegan Harbor in Illinois.

"The downside is that like all treatment process-

es, it operates at varying efficiency levels," he said. "So there is no guarantee that the material, once treated, is suitable for return to the environment. As we have seen at Waukegan and other sites where it has been used, the material has to go for landfill disposal."

It is also terribly difficult to manage heat as the characteristics of the sediment change. Units that were fed sediments too high in peat, for instance, have burst into flames. Mercury can be present in the condensate. Incomplete combustion can produce harmful dioxins and furans.

**Containment:** There are three types of places you can put contaminated sediments - an upland disposal facility (like a landfill built on top of the ground); a landfill; or an in-water site like Renard Island near the mouth of the Fox in the waters of Green Bay. Surrounded by dikes, this island was created with sediments dredged from navigation channels at Green Bay.

Another in-water site for Fox River sediments is unlikely. It would involve filling in part of a waterway, which could interfere with public use of the river. Twice during the past 10 years, environmentalists and area residents have defeated attempts by the DNR to expand Renard Island.

Such islands require perpetual maintenance, and over long periods of time create the risk of catastrophic failure.

For these reasons, and for cost efficiency, DNR and EPA engineers have targeted DNR-licensed landfills for sediment containment, and landfills are likely to play a major role in any cleanup plan proposed for the lower Fox River.

Landfills, say the engineers, provide a safe solution.

Not everyone agrees. Landfills are rarely popular with the people who would be their neighbors. The biggest concern is that they will leak and the harmful chemicals will end up in the groundwater. Dump trucks cause wear on local roads. Landfills also involve long-term maintenance and raise questions about liability.

Both Outagamie and Winnebago counties have passed resolutions banning PCB contaminated sediments from their landfills.

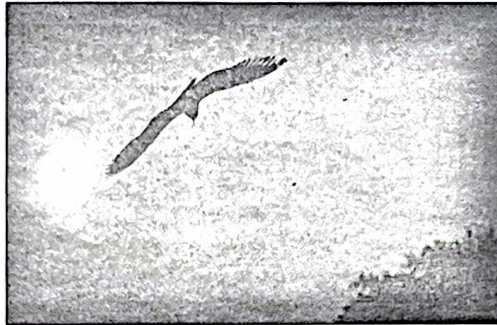
Landfill opponents contend that all landfills eventually leak.

Fitzpatrick disagrees. Landfills built since Wisconsin adopted its NR500 regulations two decades ago, he said, have an excellent track record.

"From a practical standpoint, they do not leak, and they will not leak," he said. "We have 100 years of experience with solid waste management technology. Our garbage landfills today exceed the standards that EPA allows for toxic wastes."

**Combinations:** Both EPA and the DNR regulators have said from the start that any cleanup plan for the entire lower Fox River will involve a mix of remediation technologies. Some sediments may be capped. Larger areas of sediment will likely be targeted for dredging. Some of that material might be treated to remove PCBs.

## SUPERFUND



Post-Crescent photo by Mike De Sisti

# 'Fish or factories?' The rhetoric is nothing new to the Fox River Valley

By Andy Thompson  
Post-Crescent staff writer

**I**t was a meeting to discuss the potentially disastrous economic effect that a wide-ranging Fox River clean-up would have on the local paper industry.

"We're all for cleaning up the environment, but pollution didn't happen overnight and you can't clean it up overnight," said the president of a local papermakers union. "You can have clean air and you can have clean water, but if you don't have jobs, it doesn't mean much."

The meeting took place in Neenah in March of 1972 — at a time of increasingly strong public sentiment about water pollution and what would be done to address it.

The concern was over pollution abatement proposals and there was a perceptible fear that the cost of meeting anti-pollution requirements would force area companies to hold down expansion or, in the worst-case scenario, be forced to shut down.

The arguments at that meeting 26 years ago — and those that were made decades before that — previewed the sentiments being expressed today as Fox Valley business leaders, municipal officials, government regulators and citizens debate the merits of a federal Superfund designation to deal with the problem of PCBs in the lower Fox River.

Today, the debate focuses on the massive cost associated with the proposed removal of PCBs from the Fox. It has been estimated by some that it could exceed \$1 billion and there are worries that it could cost thousands of jobs, deal certain companies a fatal blow, lead to years of lawsuits and create high levels of bitterness.

The costs of cleanups years ago were less imposing, but the nature of the sentiments on both sides of the issue were not unlike the discussions today.

"The debate raged from the 1930s on," said Paul Wozniak, research director of the Fox/Wolf Environmental History Project. "The debate always

involved the economy vs. the environment."

It involved "the same kind of arguments, the same kind of techniques" that are being heard today, he said.

There were signs posted in the area in the late 1940s that posed the question: "Fish or Factories?"

And there were arguments made decades ago that by spending a tremendous amount of money to address pollution on the Fox, "You'll be left with fish in the river but no jobs," Wozniak related.

"The major difference is, at that time, the pollution was a lot more visible to people. It's a different kind of argument (today). There was a lot of internal conflict — how much can we afford?"

The conflict was alluded to in a 1959 study of the Fox-Wolf River Basin, that was authored by the League of Women Voters of Appleton, Fond du Lac, Neenah-Menasha, and Oshkosh.

**"We're all for cleaning up the environment, but pollution didn't happen overnight."**

"The conflict between industry and conservationists in regard to water pollution is constantly rearing its ugly head, although much progress has been made in that respect," the study stated.

"Industry has cooperated well for the most part and their research laboratories are constantly working to meet these ever-present problems."

The study also sounded a theme that has been expressed during today's debate surrounding the cleanup of the Fox: The state, not the federal government, should take the initiative.

Wozniak, who wrote an article on the early anti-pollution efforts on the lower Fox and East Rivers for the publication "Transactions" in 1996, said conservationists challenged pulp mills and municipal government representatives during public hearings in the late 1940s.

Pulp and paper mills were the "economic main-

stay" of the communities and union representatives were recruited by the mills to attend and testify against pollution control, Wozniak said.

"According to paper industry executives interviewed in recent years, they had considerable sympathy with the goals of the conservationists; they argue that the forces of market competition and a lack of technical knowledge and materials are what prevented a quick cleanup of pollution."

"A central argument at the time was that if state-mandated pollution controls were required only in Wisconsin, it would make Wisconsin papermakers uncompetitive with manufacturers in other states," Wozniak wrote.

In 1950, Green Bay attorney V.G. Muench, who pushed for anti-pollution measures, told the Winneconne Businessmen's Association that controls were needed.

"Industry was almost demanding it had the right to pollute streams. We said industry had an obligation to all people to clean up the streams. They claimed it wasn't economically feasible, but what they meant was that there would be no 10 percent return on investments. It may be economically feasible to rob a bank on the basis of that theory, but it is illegal," Muench told the Winneconne group.

During a legislative debate in the early 1970s regarding state enforcement of anti-pollution laws, an elected official urged that a "reasonable amount of time" be given to the paper industry to comply.

"I agree that we must fight pollution. (But) we can't rectify the problems of 50 years in two years. We have to realize the burdens it's going to place on business and industry," one lawmaker said.

Paper production executives bristled when allegations were leveled that they were not adequately addressing pollution problems on the Fox. They also argued at times that the mills were being unfairly singled out as polluters.

During the often contentious anti-pollution hearings in the past, state officials got a firsthand look at how deep emotions ran between those who wanted a cleaner river and those who were worried about the effect an expensive cleanup would have on their livelihood.

**Editors note:** Dale Patterson, chief of the state DNR's water quality control modeling section, who served as a key source in several stories in this project, died in a plane crash Wednesday, Sept. 17, along with two other state employees.

## SUPERFUND

# DNR chief Meyer claims regardless of Superfund status, river will be cleaned

By Ed Culhane  
Post-Crescent staff writer



With or without Superfund, the Fox River will be cleaned up, the state's top environmental officer said.

George Meyer, secretary of the state Department of Natural Resources, is the man in the middle, the head of an agency that is engineering the largest river restoration ever proposed in Wisconsin.

He was asked whether the cleanup of environmentally harmful PCBs in river sediments could fail to occur, and whether the sheer difficulty of it, or the controversies that surround it, could cause the project to be shelved.

"That is not an option," Meyer said. "Federal and state laws would have to be changed to allow a situation where PCBs were freely available to the environment."

If the U.S. Environmental Protection Agency, which has proposed Superfund status for the Fox, left town tomorrow, Meyer said, the cleanup would continue, perhaps at a faster rate.

Congress could choose not to fund the Superfund law, or it could weaken the law, or cut funding to the EPA, or expand the recent moratorium on federal dredging of contaminated sediments.

None of it would make a difference, Meyer said. "Even with a moratorium, that would not stop us from applying state law. In terms of what that law requires, and the science it requires, it is very clear what the outcome has to be."

That outcome is a river clean enough to swim in, filled with fish that are safe to eat. It may take 20 years to do the work, at a cost of hundreds of millions of dollars, and it may take another 25 years after that to see fish advisories removed, Meyer said, but the job will be done.

That's not to say it will be easy.

Faced with a challenge of enormous proportions - the removal or isolation of millions of cubic yards of contaminated river sediments - Meyer and his staff are encircled by politics, beset by corporate lobbyists, plagued by government in-fighting, publicly slandered by zealots and hounded by forms of misinformation from all sides.

This is business as usual, said Meyer.

Three decades ago, he was a staff attorney for the DNR, fighting to implement the newly adopted Clean Water Act, being challenged at every step by the industries that relied on Wisconsin's rivers for their discharges.

Like those graying citizens who marched in the streets 30 years ago to get environmental protec-



**GEORGE MEYER,**  
secretary of the  
state Department  
of Natural  
Resources

tions enacted into law, Meyer remembers the dire predictions that thousands of jobs would be lost if mills were forced to treat their discharges.

"We always ran up against the threat that companies would move to other states that didn't have pollution abatement," Meyer said. "The Clean Water Act allowed state laws to have a real impact."

Like graying environmentalists telling stories around the campfire, Meyer must remind young regulators of the good fight that was won.

"We have a generation with no memory of severe pollution," Meyer said.

"It is really a double-edged sword. It becomes more difficult to convince the public of the need to spend a lot of money to undertake new cleanups. The pollution we face now is insidious and much less visible."

Meyer's career has been marked by a string of contentious issues, from license fee increases to deer herd management to the violent protests sparked by the enactment of federally sanctioned Indian treaty rights, in which he acted as the state's chief negotiator.

"The management of natural resources in this state has been controversial going back at least to the 1920s when the Conservation Department (predecessor to the DNR) was created," Meyer said.

The controversy now is stirred by some politicians, sportsmen and environmentalists who have said publicly they no longer trust the DNR to do its job.

This perception stems largely from Gov. Tommy Thompson's move four years ago, with the approval of the Legislature, to take more control of the agency, seizing the authority to hire and fire the DNR secretary from the Natural Resources

Board, a citizen commission.

Critics cite a recent report that DNR enforcement actions have fallen sharply since the change.

But although the DNR may be guilty of bureaucratic shortcomings, charges that it responds to the governor or is adjusting policies to favor industry seem to lack merit.

The engineers and scientists assigned to the cleanup are career professionals and take offense at these attacks on their integrity. They have held numerous public meetings and have made reams of scientific documents available. They fill area libraries with their reports.

Bruce Baker, administrator of the DNR's water division, said that if the DNR was in the pocket of industry, everyone would already know that. As a regulatory agency, Baker said, the DNR makes thousands of decisions a year, generally without much public attention.

During the 1970s, Baker said, when the DNR set up discharge permits for industry under the Clean Water Act and various state laws, very few observers stayed around for the details.

"If our interest was just in protecting industry, that would be a trend you would see," Baker said, "not because of this project, but because we make that decision day after day, and what you would see is a totally ruined environment in this state."

DNR officials also consider it a cruel irony that the EPA may be able to claim credit for speeding the process along.

Meyer said the DNR, after conducting years of careful research, had already brought legal pressures to bear on the paper companies and was moving into the implementation stage of the cleanup when the Superfund process was started.

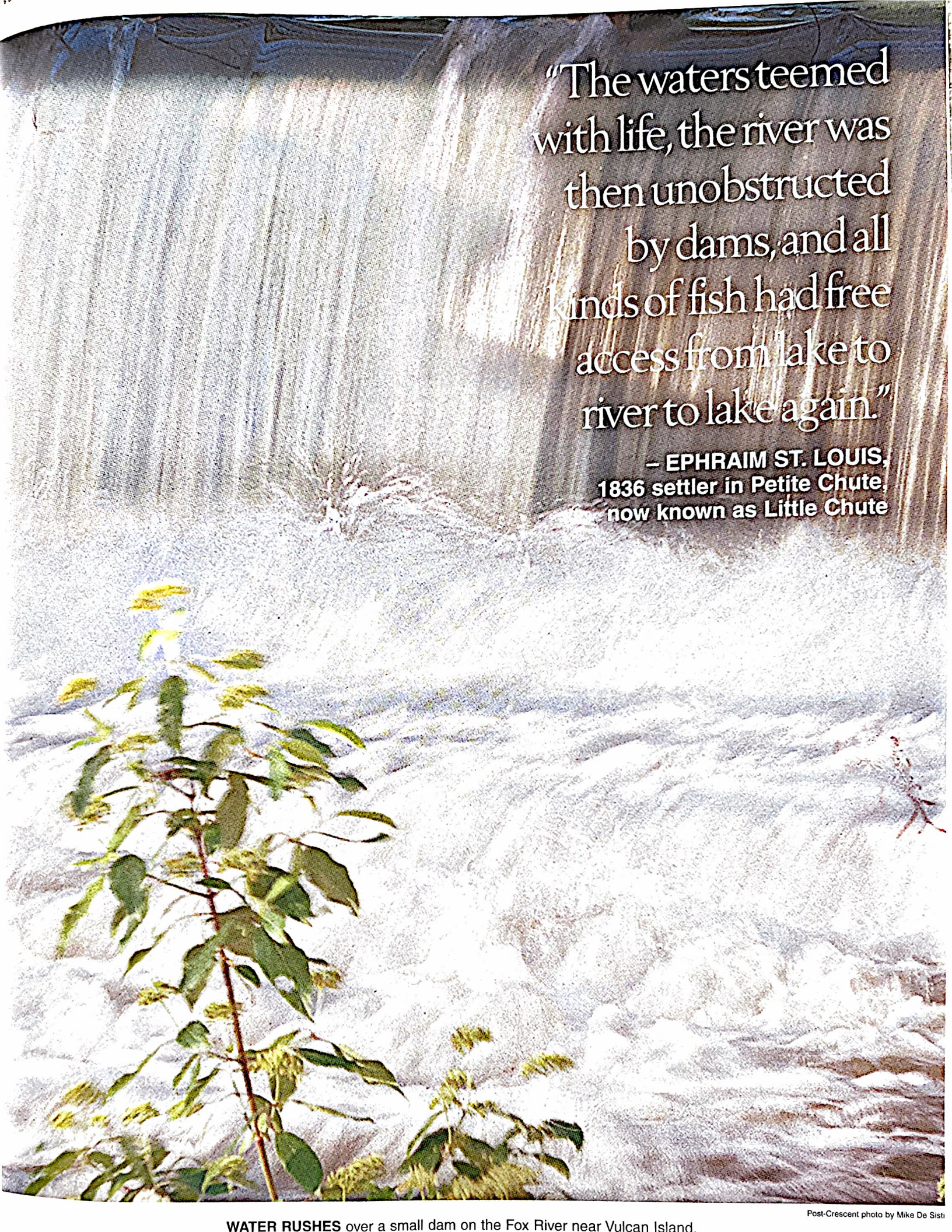
EPA officials have acknowledged as much, citing the world-class testing and computer modeling completed by the state agency.

"This is really low hanging fruit for the EPA," Meyer said. "The heavy lifting has been done in terms of studies. Then they come and try to take it over as a federal project."

In fact, while DNR officials have never stopped contending they can do a better job without the EPA, state and federal field supervisors are working well together, and there are no apparent conflicts in the field about science or engineering.

State regulators say the two dredging projects scheduled for this fall are not tests or demonstrations but the actual beginning of the cleanup. Paper company officials view the projects as demonstrations, designed to provide on-site numbers that can be used in discussing a whole river cleanup strategy.

It is the cost and extent of the cleanup that remains an unknown. The critical issue is whether government and industry can agree on a plan acceptable to the public. If not, the issue will likely be decided in court, at a great additional cost.



"The waters teemed  
with life, the river was  
then unobstructed  
by dams, and all  
kinds of fish had free  
access from lake to  
river to lake again."

— EPHRAIM ST. LOUIS,  
1836 settler in Petite Chute,  
now known as Little Chute



Post-Crescent photo by Mike De Sisti

LIGHTS FROM the Inter Lake Papers mill in Kimberly form a series of colorful flares on the Fox River.



80-PAGE  
SPECIAL REPORT



The life and times of the lower Fox River