

The Sheboygan River Explorer

January 2012

Volume 1, Issue 1



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Welcome to The Sheboygan River Explorer!



This is a new quarterly newsletter intended to be an introductory source of information about cleanup and restoration happening in the Sheboygan River Area of Concern. The Area of Concern is the lower 14 miles of river, from the Sheboygan Falls dam to the Sheboygan Harbor.

This year, 2012, is going to be a historic year for the Sheboygan River! Approximately \$80 million dollars worth of work is planned to be finished in 2012 to remove contaminated sediments and to restore habitat that has been degraded. Why is this work needed?

Contaminants in the sediment, primarily PCBs, are eaten by small aquatic organisms that are then eaten by fish and wildlife. The PCBs accumulate in fish and wildlife, creating a health risk for them and for us, when we harvest and eat them. Wouldn't it be a relief to harvest fish and game from the Sheboygan River and know that it is safe to eat?

Additionally, fish and wildlife habitat along the river has been degraded from urbanization and other activities. Because the Sheboygan River is a large river along the Lake Michigan coast, it is of special importance for fish and wildlife populations and the larger Great Lakes ecosystem.

Learn about the river—explore it, and get involved to help restore it!

Debbie Beyer,
UWEX Natural Resources Educator

Programs and Events

January 25:

Projects to remove navigation sediments and PCB contamination, and to restore fish and wildlife habitat – public information meeting: John Michael Kohler Arts Center, 6:30-8:30 pm. Will air on WSCS Cable Channel 8. See www.wscssheboygan.com for TV8 schedule.

January 26:

Placement of Harbor Sediment at Sheboygan County Airport – Public Information Meeting: Heritage Aviation Center, Sheboygan County Memorial Airport, 6:00-7:30 pm.

Not able to attend:

Check <http://fyi.uwex.edu/aocs> for presentation recordings from these meetings.

Programs and Events continued on page 7

Exploring Sheboygan River Fish, Wildlife and Habitat

In late 2009 and early 2010, the Sheboygan River Fish and Wildlife Technical Advisory Committee submitted a \$200,000 Great Lakes Restoration Initiative (GLRI) proposal to fund a rapid ecological assessment of the Sheboygan River Area of Concern (AOC). The AOC is the lower 14 mile stretch where there are consumption advisories on the fish and waterfowl due to PCB contamination.

The purpose of the ecological assessment is to gather baseline data on various fish, wildlife and habitat components needed in planning habitat restoration projects and to measure success once the projects are implemented. The ecological assessment is nearing completion. The following ten components are funded under the GLRI grant:



Biologists from the Sheboygan River Fish and Wildlife Technical Advisory Committee toured the Area of Concern by canoe in fall 2010 to identify potential restoration project areas.

Fish community assessment

Fish surveys were conducted at 16 sites in the Sheboygan River, Willow Creek, Weedens Creek, and the Onion River below the Hingham dam. Spring northern pike spawning surveys were done in the AOC upstream of Taylor Drive.

Macroinvertebrate and fish habitat assessment

Macroinvertebrates are critters that do not have back bones. You can see them with your naked eye. They include critters like crayfish, mussels, insect larvae, etc. Surveys were done at 16 sites in the Sheboygan River, Willow Creek, Weedens Creek, and Onion River below the Hingham dam. Fish habitat

assessments were done at the same sites. Two aquatic plant surveys were done, the first near the Wildwood Park Island complex and the second near the stormwater detention pond at the entrance to UW-Sheboygan.

Herptile survey

Herptile is the scientific collective term for reptiles and amphibians. Herptile surveys were done at selected locations within the Sheboygan River AOC and its riparian corridor, including the Schuchardt property. At each location, surveyors noted species presence and abundance. These surveys focus on endangered, threatened, special concern, and regionally rare species, but all species encountered were noted.



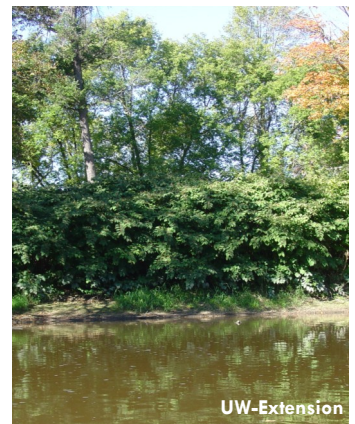
Snapping turtles are one of the reptile species found along the Sheboygan River during 2011.

Breeding bird survey

Breeding bird surveys were done at selected locations within the Sheboygan River AOC and its riparian corridor. At each location, a list of bird species seen or heard was compiled. These surveys focus on endangered, threatened, special concern, and regionally rare species, but all species encountered were noted.

Natural community, rare plant, and invasive plant survey

Natural communities, rare plants and invasive plants were surveyed in the Sheboygan River AOC and its riparian corridor.



A non-native invasive plant, Japanese knotweed, is found forming dense "hedges" along portions of the Sheboygan River.

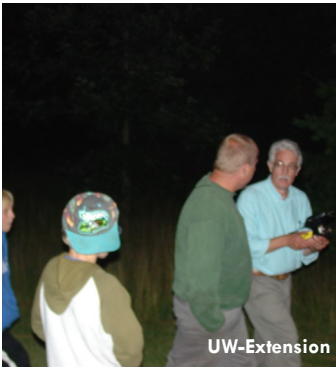
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(Continued from page 2)

Characteristic, rare, and invasive plant species of suspected high-quality natural communities within the area were surveyed. The surveyors took notes on apparent health, approximate species abundance, and other relevant factors.

Bat survey

WDNR conducted bat surveys along the entire reach of the Sheboygan River AOC with a hand-held device called the Ana-Bat Detector, which



An August 2011 program gave participants a glimpse of what it is like to survey bats along the Sheboygan River using hand-held machines that detect the high-pitched calls of bats.

detects bat vocalizations above the auditory range of the human ear. The Ana-Bat puts a species name, time, date, and location stamp on each bat occurrence. Additional land-based surveys were conducted from Sheboygan Falls to Taylor Drive, where the river is shallow and difficult to canoe at night.

Mussel survey

Mussel surveys were performed at select locations in the Sheboygan River AOC. The biologist compiled a list

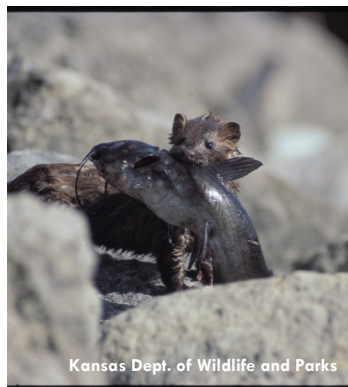
of mussel species found at each location and noted the apparent overall health of the mussel community, species abundance and evidence of recent reproduction.

Wintering bird survey

Wintering bird surveys were conducted using methods that expand upon those for the Mid-Winter Waterfowl Surveys, performed every January in cooperation with the U.S. Fish & Wildlife Service. These surveys were done bi-weekly throughout the winter season. Biologists recorded bird species and numbers, weather, and other factors.

Small mammal and mink survey

WDNR collected small mammals (mice, voles, shrews, etc.) from floodplain areas in the Sheboygan River AOC and an uncontaminated control site for contaminant analysis. Comparing the AOC sample results to those from the control site will provide information on the current extent of contamination of small mammals in the



Kansas Dept. of Wildlife and Parks

Mink are sensitive to PCB contamination and were noticed to be absent from the lower Sheboygan River corridor in the 1980s. Surveys aim to find out if they are still absent.

floodplains of the AOC. Mink will be collected during the winter 2011/2012.

It is suspected that mink are missing from the area due to the contamination.

Kingfisher nest survey

DNR staff located belted kingfisher nest burrows along the Sheboygan River AOC and visited them weekly



Biologists worked hard to get to the high banks where kingfishers nest.

through mid-May, or until eggs were laid, whichever came first. When eggs were first detected, nests were visited twice weekly to record stage of incubation, clutch size, and the age and condition of chicks. This information was gathered using a video burrow probe system. Nest checking continued until the young successfully fledged or the nest failed.

The data from these surveys and others are being analyzed over the winter. Stay tuned for future programs and articles reporting these anxiously-awaited results!

By Stacy Hron, WDNR and Debbie Beyer, UWEX

Did you know?

What is an Area of Concern (AOC)?

In 1987, 43 Great Lakes Areas of Concern were designated. These are areas that are severely degraded and fail to support aquatic life beneficial for human use (fish and wildlife that are safe to eat). Wisconsin has five AOCs.

Are all of the AOCs being cleaned up like the Sheboygan River?

People are working on them, but they will take more time and money. For various reasons, the Sheboygan River is on a top priority list within the Great Lakes region. Thanks to the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative (GLRI), Superfund, and Legacy Act; and partnerships with the WDNR, City of Sheboygan, Sheboygan County and others, an unprecedented amount of work is being accomplished here.

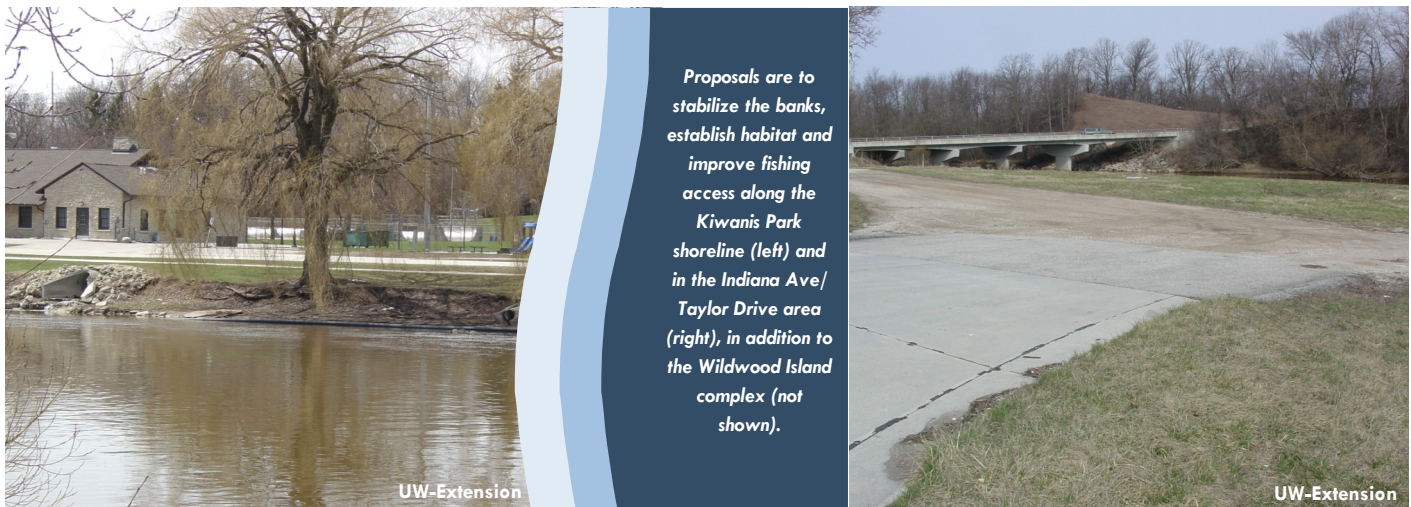
What is a Beneficial Use Impairment (BUI)?

A BUI can be thought of simply as a way in which the river is impaired. There are nine ways (or BUIs) in which the Sheboygan River is listed as being impaired.

Sheboygan River AOC Habitat Restoration Projects

Over many decades, the Sheboygan River Area of Concern (AOC), which encompasses the lower 14 miles of the Sheboygan River, has experienced a variety of physical and hydrologic disturbances that have resulted from urbanization, man-made alternations and development along the river corridor, and the effects of flooding associated with extreme rainfall / runoff events. These repeated disturbances have adversely affected native plant and animal species through degradation and loss of individual species and habitats. Disturbance conditions have also resulted in the introduction of

Design concepts being considered will address: shoreline naturalization; establishment of emergent riparian habitat and a native vegetation buffer; slope reinforcement; reduction of storm water impacts; enhancement of habitat connectivity; establishment of migratory bird, shorebird, fisheries, and herptile habitat; establishment and restoration of riparian wetlands; and management of public access. An important component for each of the restoration areas will be the development of a native plant community restoration plan focused on re-establishment of wetlands and uplands



non-native, invasive species into the AOC. As a result, multiple beneficial use impairments (BUI) associated with fish and wildlife and their habitats have been identified within the Sheboygan River AOC.

To partially address habitat-related BUIs and move towards the delisting of the Sheboygan River as an AOC, the City of Sheboygan, Sheboygan County and the Wisconsin Department of Natural Resources (WDNR) are undertaking three habitat restoration projects along the Sheboygan River that are being funded through the Great Lakes Restoration Initiative (GLRI) Program. The three habitat restoration project sites are: (1) Kiwanis Park Shoreline Project Area, (2) Wildwood Island Project Area, and (3) Taylor Drive and Indiana Avenue Project Area.

compatible with the conditions and use of each area.

These habitat restoration site designs are being completed by a consultant project team led by Short Elliott Hendrickson, Inc., Inter-Fluve, Inc., and Ecological Services of Milwaukee, Inc.. Conceptual restoration designs will be developed by mid-January 2012 and related construction documents will be developed by the end of April 2012. The majority of construction activities associated with all three project areas are to take place prior to September 2012, with maintenance and monitoring activities occurring for multiple years following construction.

By Tom Sear, Short Elliott Hendrickson, Inc.

Making “Cents” of Sheboygan River Dredging, Cleanup and Restoration

The Environmental Protection Agency (EPA) declared the lower 14 mile section of the Sheboygan River a hazardous waste site under the EPA Superfund legislation in 1986. A Sheboygan River Dredging Workgroup was established in August of 2009 to assist in coordinating these projects, and is represented by officials from the EPA Region 5, Great Lakes National Program Office (GLNPO), Wisconsin Department of Natural Resources (DNR), United States Army Corps of Engineers, City of Sheboygan, Sheboygan County, Wisconsin Public Service Corporation, Pollution Risk Services (PRS), and Tecumseh Corporation.

The dredging projects are part of a multi-phase cleanup project located in the Sheboygan River Area of Concern (AOC), and are coordinated by the Great Lakes Program Office of the EPA. They include:

- **2006/2007 Superfund Upper River Tecumseh Dredging Project** - completed. Approximately 20,728 cubic yards of contaminated polychlorinated biphenyl (PCB) sediment was removed at a cost of \$20 million by Tecumseh Corporation and PRS. This Upper River project began in the City of Sheboygan Falls and extended to the Village of Kohler.
- **Lower River Superfund Dredging Project** - currently



A hydraulic dredge at work in the lower river Superfund cleanup of PCB-contaminated sediment. Watch for it again summer, 2012.

underway. Approximately 53,000 cubic yards of contaminated PCB sediment will be removed at a projected cost of \$12.5 to \$15 million, paid by Tecumseh. Tecumseh and PRS are considered the Principal Responsible Parties. PRS is the contractor performing the dredging work. The Lower River project area is between the Chicago & Northwestern railroad bridge and the Pennsylvania Street Bridge in the City of Sheboygan.

- **Camp Marina Superfund Dredging Project** – completed in 2011. Approximately 28,500 cubic yards of polynuclear aromatic hydrocarbon (PAH is a suspected human carcinogen) contaminated sediment will be removed at an estimated cost of \$9 million to \$10.5 million, and will be paid by Wisconsin Public Service, the Principal Responsible Party. This project is located within the Superfund Lower River section in the City of Sheboygan adjacent to Boat Island.



Camp Marina cleanup in action, summer 2011

- **The Legacy Act Dredging Project Feasibility Study & Design** - currently under way, costing \$1,142,857. The project will lead to additional dredging in the Lower River project area.

(Continued on page 6)

Non-Federal Sponsors Share:

Sheboygan County	\$100,000
City of Sheboygan	\$100,000
DNR	\$100,000
WPS	\$100,000
Federal Sponsor-EPA Share	\$742,857

Legacy Act Dredging Project - dredging to begin in 2012. Approximately 196,000 cubic yards of PCB and PAH contaminated sediment to be removed from the Lower River. The match or non-federal share of the project (40-50%) is the work being performed by Superfund and Camp Marina projects (Principal Responsible Parties), which generates a Legacy project of \$20 to \$30 million. The federal funds available for this project come entirely from the Great Lakes Legacy Act through the Great Lakes Restoration Initiative (GLRI) Program of EPA. The GLRI targets the Great Lakes Areas of Concern. This project is located in the Lower River area.

US Army Corps Dredging Project - dredging to begin in 2012. Approximately 170,000 to 209,000 cubic yards of sediment to be removed at a projected cost of \$10 to \$15 million. The project is funded through the GLRI. The project utilizes the Army Corp's Strategic Navigation Dredging Authority within the navigation channel of the Sheboygan Harbor. This section is located from the 8th Street Bridge east to the Sheboygan Harbor. The City of Sheboygan and Sheboygan County are responsible for identifying and preparing a local site for the removed sediment. This sediment is not considered hazardous.

Sheboygan River AOC Fish & Wildlife Restoration Projects - to be implemented in 2012. Approximately \$5.1 of Great Lakes Restoration Initiative funding is allocated for Sheboygan River shoreline restoration stabilization projects, fish and wildlife habitat restoration and assessment, Wildwood Island restoration, eroding river bank stabilization and invasive species control in the Sheboygan River. These projects are located throughout the Sheboygan River AOC.

Total cost of all projects is between \$77 and \$96 million.

By Adam Payne, Patrick Miles, and Aaron Brault, Sheboygan County

A Long-Awaited Opportunity to Deepen the Sheboygan Harbor

The Sheboygan Harbor was last dredged to its authorized depth in 1969. Since then, a restriction was placed on dredging the federal channel in Sheboygan due to contamination from PCBs. Also, sediment that settles in the harbor has resulted in a restriction of the safe draft for shallow draft vessels. Large vessels can no longer use the harbor, thus limiting activity.

A proposed action from the US Army Corps of Engineers (USACE), Detroit District is available and open for public comment until January 29, for dredging sediment from the federal navigation channel in the Sheboygan Harbor with placement of that dredged material in an upland location within the Sheboygan County Airport. An Environmental Assessment (EA) was written to assess the impacts of the proposed action on the human and natural environment. The EA can be found at: <http://tinyurl.com/dredgingea>.

The EA is also available at the Sheboygan City Hall, Mead Public Library, Sheboygan Falls Memorial Library, US Post Offices in Sheboygan and Sheboygan Falls, and the Town of Sheboygan Falls.

The purpose and need for this dredging project is to remove low level contaminants from the Federal Channel, improve the aquatic environment, and remove the dredging restrictions in the harbor. The dredging would help move towards delisting the Sheboygan River as an Area of Concern. Without this dredging project, Sheboygan's water draft would continue to be minimal, and at some point in the future, the continued restriction on maintenance dredging would render the harbor useable by only small vessels. The harbor would continue to have dredging restrictions due to the low-level PCB contamination in the sediment. The restrictions on dredging would remain in place and the harbor's listing as an Area of Concern would continue.

Any questions regarding the proposed action can be directed to Mr. Charles A. Uhlarik, Chief of the Environmental Analysis Branch, Detroit District, USACE, at 313-226-2476.

By Deb Beyer, UWEX, based on Dec. 29, 2011 Department of the Army Public Notice

Great Lakes Legacy Act Projects Enhance Superfund Cleanup

In 2011, the U.S. Environmental Protection Agency worked on a feasibility study to identify and compare different options for addressing contaminated sediment in the Sheboygan River. This was followed by design of the best cleanup option. The EPA performed this Great Lakes Legacy Act feasibility study and design project in partnership with Wisconsin Department of Natural Resources, the City of Sheboygan, Sheboygan County, and Wisconsin Public Service Corporation. This work will enhance Superfund action on the river.

By Caitlin McCoy, Illinois-Indiana Sea Grant

Local Perceptions About the Sheboygan River Studied

Caitie McCoy, Illinois-Indiana Sea Grant, performed a series of interviews with local Sheboyganites this past summer to understand community thoughts on the Sheboygan River and the cleanup projects. Her findings listed here highlight the variety of local opinions, but are not completely representative of the community.

- 1) Interviewees saw the Sheboygan River as an asset that is impeded by a negative stigma of pollution. However, they believe that the cleanups will help remove the stigma.
- 2) Interviewees were primarily concerned with river depth, believed the cleanups will increase river depth, and wanted to know more about potential cleanup effects on depth.
- 3) Interviewees believed the cleanup will result in economic revitalization, fueling economic development and helping the community use the river to its full potential.
- 4) Interviewees were mixed in their views on how cleanups will impact fish populations and fish advisories; they wanted more information on this.

By Caitlin McCoy, Illinois-Indiana Sea Grant



Fishing is a popular activity in the Sheboygan River and currently there is a consumption advisory on fish caught here, due to contamination from PCBs.

Programs and Events (continued from pg. 1)

Contact Camp Y-Koda at campykoda@sheboygancountymmca.org or (920) 467-6882 to register for these programs:

May 16, Sheboygan River Kayak Trip: Youth trip for ages 10 to 14. 3:00-5:30 pm.

May 19, 6th Annual Sheboygan River Litter Clean-up: all ages – family event. 10:00am-2:00pm.

June 2, Outdoor Activity and Free Fishing Day: River Park in Sheboygan Falls, all ages – youth and family event. 10:00am-4:00pm.

June 11-15, River Trips Day Camp: ages 11-14.

June 25-29, Learn to Sail Day Camp: ages 8-14.

July 16-20, Hook, Line and Sinker Day Camp: ages 6-8.

July 16-20, Surf's Up – Windsurfing Day Camp: ages 8-14.

July 30-Aug. 3, Junior Kayak Day Camp: ages 8-10.



Fish Consumption Advice for the Sheboygan River Area of Concern

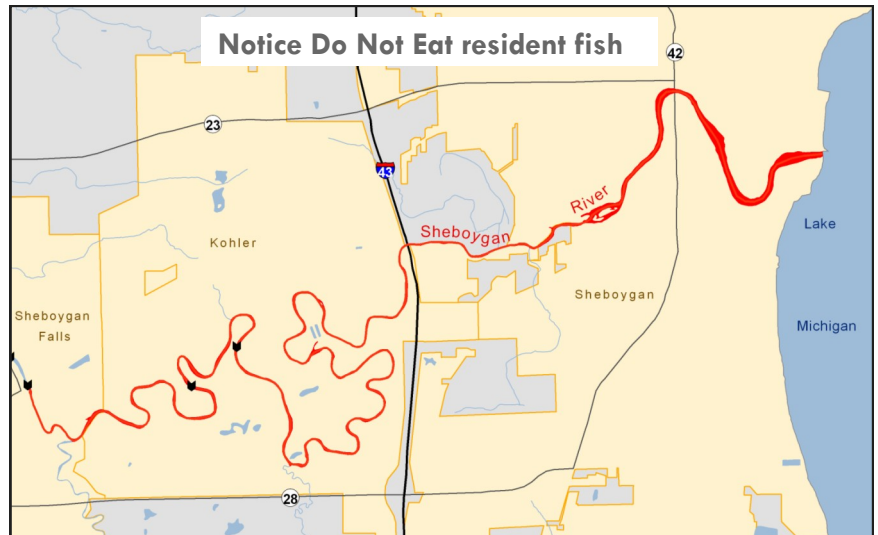


Why should I eat fish?

Fish are a nutritious family food. Modest amounts of fish can provide health benefits, although little additional benefit is gained by eating more than 1-2 servings per week. Some of the benefits of catching and eating fish include:

- Low cost and fun to catch your own fish
- Low in fat, yet high in protein
- Great source of vitamins, minerals, and omega-3 fatty acids

However, resident fish caught in the Sheboygan river should not be consumed due to polychlorinated biphenyls (PCBs). Trout and salmon that come up river from Lake Michigan are subject to the Lake Michigan PCB advisory. (see table on page 2 for advice on trout and salmon from Lake Michigan).



What are Polychlorinated biphenyls (PCBs)?

PCBs are man-made chemicals that were used in electrical equipment, industrial processes, and manufacturing and recycling of carbonless copy paper. PCBs were discharged into the Sheboygan River for decades before it was discovered that these chemicals build up in the environment and pose health risks to humans and wildlife. Restrictions on PCB use, manufacturing, and disposal began in the 1970's, but PCBs remain in the sediment of the river. Efforts are underway to remediate contaminants in the sediments of the Sheboygan River. For more information please visit <http://www.epa.gov/region5/cleanup/sheboygan/>

Tell me about PCBs in fish and what types of fish are safe to eat

- PCBs are resistant to degradation and bioaccumulate to higher concentrations through the food chain
- Younger, smaller fish have lower amounts of PCBs than larger, older predator fish
- PCBs accumulate in the fatty tissue, so fatty fish such as carp and catfish have higher levels of PCBs.
- No resident fish in the Sheboygan River are currently safe to eat

Why are the health risks?

PCBs are stored in your body fat for years. Your health risk may increase as you eat more fish that are high in PCBs. Health risks include:

- Developmental impairments in children
- Harmful to the reproductive system
- Associated with a higher risk of cancer
- Harmful to the immune system
- Alters thyroid hormones

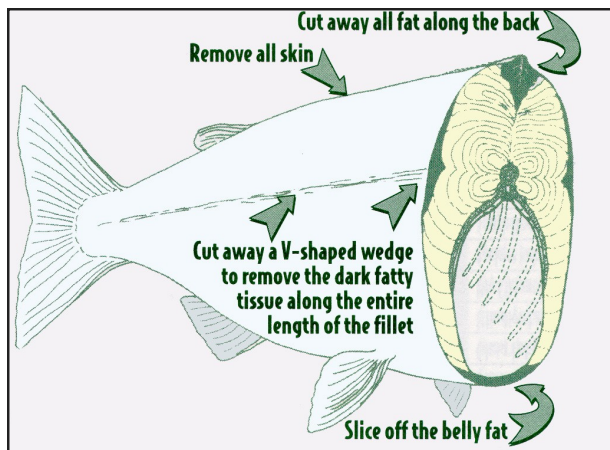


Photo by Lake Michigan Work Unit
Sheboygan River at Esslingen Park

How should I prepare and cook my fish?

Proper cleaning and cooking techniques can reduce PCB levels by up to 70%. Follow the following preparation techniques:

- Fillet your fish
- Remove the skin
- Trim away belly fat, fat on the backsides and fatty dark meat
- Do not eat the eggs
- Bake, broil, or grill
- Discard all liquids and frying oils



Meal Size	
Weight (lbs)	Precooked fish (oz.)
225	12
154	8
77	4
40	2
3.0 oz ~ deck of cards	

The size of your meal depends on how much you weigh. Use the table to left as a serving size guideline as you follow the fish consumption advice in the table below.

Women of childbearing age and children under 15 should be especially careful to follow the meal sizes and space fish meals out according to the advisory tables

Sheboygan River -

Sheboygan Falls downstream to Lake Michigan

DO NOT EAT RESIDENT FISH

Lake Michigan

Eat no more than 1 meal /week	Eat no more than 1 meal /month		Eat no more than 1 meal every 2 months
Steelhead (0-22")	Steelhead (22+")	Brown trout (0-25")	Brown Trout (25+")
	Coho salmon	Chinook salmon (0-36")	Chinook salmon (36+")

See the WDNR's website or the Choose Wisely booklet for updates on fish safe-eating guidelines. <http://dnr.wi.gov/fish/consumption/>



This material is paid for by support from the U.S. Environmental Protection Agency, Great Lakes Restoration Initiative, under Assistance Agreement No. GL00E00651-0.

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Submit comments and questions on Sheboygan River dredging and restoration projects to:

Chad Pelishek
Dept. of Planning and Development
City of Sheboygan
828 Center Ave, Suite 104
Sheboygan, WI 53081
(920) 459-3377
development@ci.sheboygan.wi.us



Jon Guntow

Please Join Us!

Sheboygan River Public Information Meeting

January 25, 2011, 6:30-8:30 pm

John Michael Kohler Arts Center (theatre)

Projects to remove navigation sediments and PCB contamination, and to restore fish and wildlife habitat

Explore and Learn More!

Wisconsin AOCs info & resources for citizens:
<http://fyi.uwex.edu/aocs>

Wisconsin AOCs official maps, records and reports:
<http://dnr.wi.gov/org/water/greatlakes>

Sheboygan River canoe and kayak trips:
<http://sheboygancountymca.org/camp-y-koda>

Sheboygan River Basin Partnership: <http://www.sheboyganrivers.org>

All Great Lakes AOCs information:
<http://www.epa.gov/greatlakes/aoc>

Coming soon!

Narrated presentations on a variety of Sheboygan River clean-up and restoration topics – PCB clean-up, habitat restoration, wildlife toxicology, contaminant monitoring through mussels and tree swallows, fish and wildlife of the Sheboygan River, and more!
Check out <http://fyi.uwex.edu/aocs>



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