



## Information on Friends for Volunteers

**Friends of the Chicago River was founded in 1979** after a *Chicago Magazine* article asserted the Chicago River had no friends and needed a champion to save it from pollution, abuse and neglect. As a result, 100 people reached out, planned a meeting and Friends of the Chicago River was born.

Early on, Friends concentrated on calling attention to the river through advocacy, canoe trips (considered radical in the 80s), and mapping, believing a healthy Chicago River system could be a catalyst for community development. Friends' work has evolved and expanded since then.

- **The Education & Outreach team reaches the public through the Chicago River Schools Network, the Chicago River Bridgehouse Museum, and the canoe program.**
- **On the Ground work restores habitat for catfish, turtles, bats and osprey.**
- **The Policy and Planning team works on systemic river improvements overseeing riverfront development, invasive species strategy and water quality standards.**

**Chicago River Day started in 1992** by a group of 25 feisty river advocates. This beloved volunteer day has an **immediate impact and collectively brings about long-term improvements** to the health of the Chicago River. Trash is not only ugly, it has a serious negative impact on the health and well-being of wildlife. Animals ingest trash, become entangled in it, and are injured by it.



The Chicago River system is no longer a forgotten river filled with sewage and trash. Today, the river is vibrant wildlife corridor, accessible, and alive with people and wildlife including over 70 species of fish, countless species of birds, and a host of beavers, mink and turtles.

**Friends' mission is to improve and protect the 156-miles of the Chicago River system which includes the Calumet River and its surrounding watershed.**



# Overview of Friends for Volunteers

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## I. Friends of the Chicago River

- Friends is the only organization focused solely on the Chicago River.
- Our vision: Make the Chicago River one of the world's greatest metropolitan rivers.
- Our mission: Improve and protect the Chicago River system for people, plants and animals.
- We focus on three program areas:
  - Education and Outreach: Build community spirit, cultivate advocacy, stewardship and support for the river. We believe popular support for the Chicago River is essential to the long-term success of improvement efforts. We do so through our canoe program, the Bridgehouse Museum and the Chicago River Schools Network.
  - On-the-Ground Projects: Restore healthy habitat.
  - Policy and Planning: Inform officials and partner with key agencies to improve water quality. Our planning committee reviews river-edge developments to ensure river-sensitive design. Our Clean Water Initiatives improve water quality for people and for wildlife.



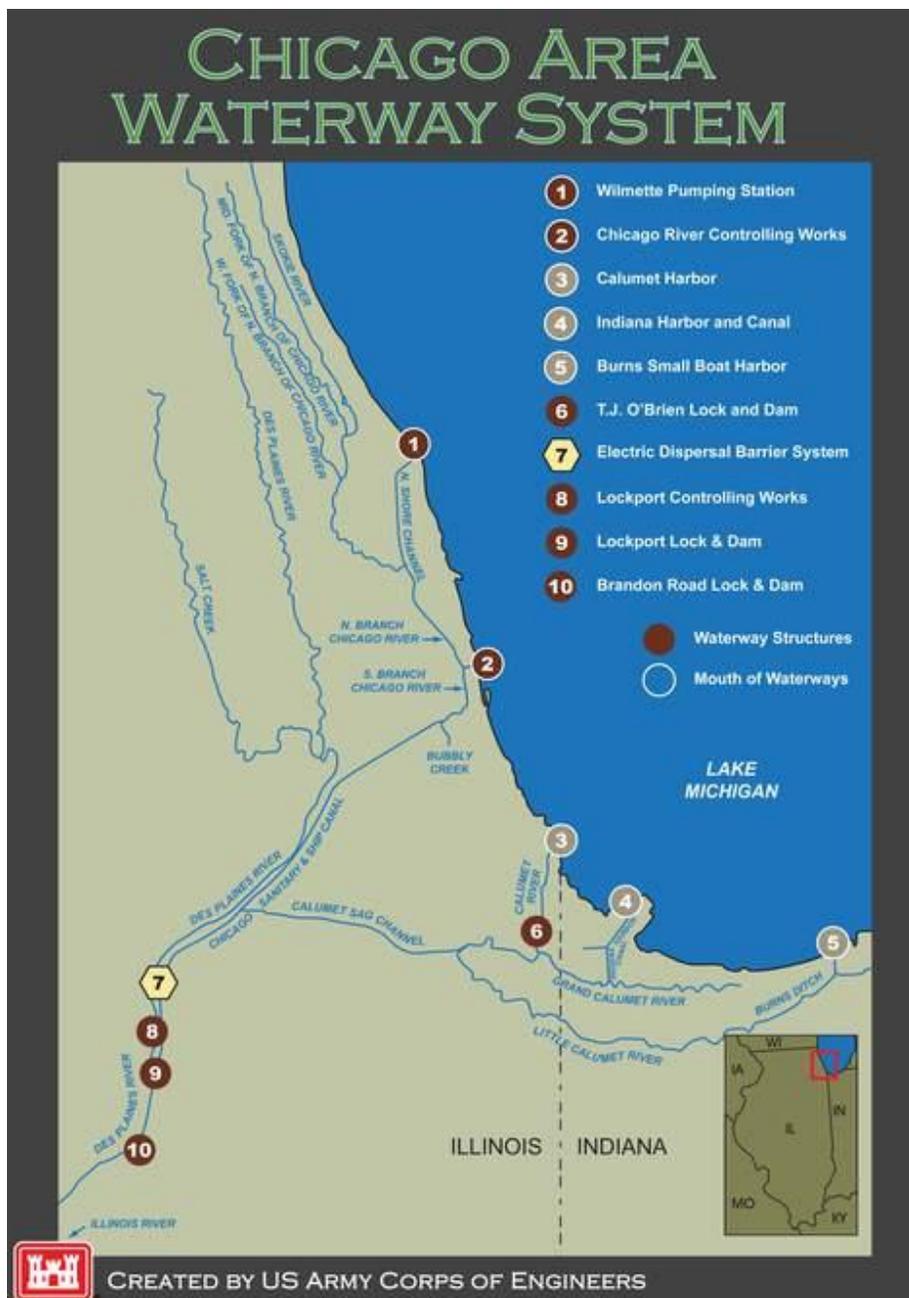
Margaret Frisbie, Friends executive director

## II. Chicago River system

- 156 miles long
- 674-square-mile watershed
- Includes the Chicago and Calumet rivers and their tributaries – here is a link to learn more about water trails and various input locations.  
<https://paddleillinoiswatertrails.org/>
- Home to more than 70 species of fish, important greenway and migratory flyway for more than 300 species of birds
- The river has been highly modified in places, including channelization and reversal, but also contains many protected natural corridors.
- Historically, the river is important link between the Great Lakes and Mississippi River.
  - ~ The river was crucial in Chicago's development as a major center of the lumber and meatpacking industries during the 19<sup>th</sup> Century. The Illinois & Michigan Canal in 1848 joined the Chicago River with the Illinois River. The canal provided a direct water link between the Great Lakes and the Mississippi River, and helped to shift the center of Midwestern trade from St. Louis to Chicago.

~ By the 1870's, waste from industrial and commercial development led to visible signs of pollution and increased concern about threats the river posed to public health. Between 1889 and 1910 two major engineering projects re-directed the flow of the river away from Lake Michigan, into the Sanitary and Ship Canal (constructed between 1889 and 1900) and the Des Plaines River. The completion of the eight-mile North Shore Channel in 1910 diverted wastes from the northern suburbs from Lake Michigan into the North Branch.

~ Two additional projects were completed in the 1920s and helped form the Chicago River system. In 1922, the 16-mile Cal-Sag Channel was constructed between **Blue Island** and Sag Bridge to link the Little Calumet River to the Sanitary and Ship Canal. In 1928, the final major engineering project on the river system straightened the channel of the South Branch between 18th and Polk by digging a new channel 850 feet west of Clark Street and filling the old river channel.



### III. Focus Area One: Education and Outreach

#### Canoe program

- The canoe program is one of Friends' oldest education and outreach programs.
- The program brings hundreds of people to the river system each year.
- The goal is to forge a positive emotional connection between people and the river.
- The program has provided important data on river recreation as part of the battle to raise water quality standards on the river, paving the way to disinfection. Proving people use the river for recreation forced the Illinois Pollution Control Board to raise water quality standards to protect river users and aquatic life. This led to disinfection—removing bacteria from sewage effluent—and making the river swimmable in many sections.
- Volunteer canoe guides (aka the best volunteers ever) facilitate the canoe program.



#### Chicago River Day

- Chicago River Day is Friends' annual river clean-up day.
- The first “Chicago River Rescue Day” was held in 1992, with 25 volunteers at a single site in Morton Grove. These early visionaries dragged old shopping carts, mattresses, plastic bags, and trash from the banks.
- The name of the event was changed to Chicago River Day to reflect the river's continued improvement.
- The event is held every year in May, and hosts some 2,000 volunteers at more than 65 sites across the watershed, ranging from Lake County to the Little Calumet.
- Event activities focus on removing tons of garbage from the river, but also include trail maintenance and habitat restoration projects.



## Bridgehouse Museum

- The McCormick Bridgehouse & Chicago River Museum is one of Friends' key education and outreach venues.
- Opened in 2006, the museum is located in the southwest bridge tower on the DuSable (Michigan Avenue) Bridge.
- It connects people to the river and is a gateway to Friends' other programs.
- The museum has five floors of exhibits celebrating Chicago's river and world-famous movable bridges.
- It is the only publicly-accessible Chicago bridge tower and includes a gear room where visitors can see the inner workings of the bridge as it is being raised and lowered.
- The museum is open May-October. Admission is \$6 per person.
- Chicago has 37 movable bridges, which used to lift thousands of times a year. Today, downtown bridges lift approximately 100 times a year.
- The DuSable Bridge was the first double-deck, double-leaf, fixed trunnion bascule bridge ever built. The balance of the approximately 4,100-ton bridge leaf and 12,000-ton counterweight of the bridge is so precise it only takes a 108-horsepower motor (less than a car engine) to open and close each leaf.



## Chicago River Schools Network

- Friends provides K-12 teachers training, assistance and lesson plans on the history and ecology of the Chicago River.
- We offer classroom presentations and field trips.



## Volunteer Opportunities

- The Centennial Volunteers program provides opportunities for habitat restoration (in partnership with the Forest Preserves of Cook County, Friends of the Forest Preserves and the Field Museum) focusing on nine river-edge sites. Volunteers help with invasive species removal, native seed collection/sowing, and shrub planting.
- Hands-on stewardship is conducted at a variety of river side locations.
- Wildlife Monitoring volunteers collect information at habitat restoration sites.
- Non habitat-restoration opportunities include the canoe guide program, working at Friends events like Student Congress or Big Fish Ball, or representing Friends at events.

## IV. Focus Area Two: On the Ground

### Wildlife Habitat Improvements

- Friends works to restore wildlife habitat for a variety of river-dependent species.
- Our focus is on bats, ospreys, turtles and fish.
- Bats: Nine different species including little brown, big brown, tri-colored, and evening. Illinois' bat population suffers from habitat loss.
  - Friends installed six maternity nesting colonies in promising locations. These colonies are 4' x 4' x 4' and 12' off the ground, and can house more than 1,000 mother bats and their young.
- Ospreys: Bird of prey with striking black and white coloring. A national conservation success story, but still endangered in Illinois. They lack natural nesting locations for future generations to flourish.
  - Friends installed five osprey nesting platforms. These platforms are 70' off the ground, and allow osprey 360-degree visibility to spot approaching threats.
- Turtles: Eight species, including painted, snapping, spiny softshell and red-eared sliders. Lack of available nesting locations result in egg and young turtle predation. Turtles are vulnerable to human interference when nesting along trails and roadways.
  - Friends restored 98.6 acres to-date of turtle nesting habitat along the river.
  - **Success:** biologists tracked turtles successfully nesting at these restored sites, where they had unsuccessfully attempted to nest in the past.
- Fish: Friends restored fish habitat through:
  - Fish releases: We have released 277,000 juvenile channel catfish and 8,000 juvenile northern pike into the river since 2014.
  - Habitat restoration: restoring upland and riparian habitat along the banks, through volunteers or contractors, to reduce erosion and runoff into the river, making it healthier for fish and other aquatic species.
  - Artificial structures:
    - Fish Hotel: Friends' demonstration project of floating habitat in the Main Stem inspired the permanent Jetty fish habitat on the Chicago Riverwalk.
    - The Jetty: the Riverwalk block between Franklin and Wells has a suite of fish habitat, including floating gardens, hanging substrates, and fish lunkers (boxes with holes for small fish to hide in).
    - Catfish habitat: Friends installed 400 channel catfish nesting cavities into the river. These are tubes of permeable concrete that mimic hollow logs. At least 77 species of fish have been found in the river system, including large and smallmouth bass, walleye, bluegill, channel catfish, rainbow darter and banded killifish.



## **Invasive species**

- Invasive species are an ongoing threat to the Chicago River system.
- Invasive species refer to an organism that takes over an ecosystem, out competing other species for resources (food, water, sunlight, etc) and reducing biodiversity.
- Friends combats invasive species in two primary ways:
  - Working on the ground with contractors and volunteers as part of habitat restoration efforts.
  - Contributing to committees and policy efforts designed to combat invasive species on a regional level.
- The animal species people ask about most frequently is Asian carp.
  - There are NO Asian carp in the Chicago River system.
  - Groups are worried that Asian carp (a catch-all name for multiple species including bighead and silver carp) will use the Chicago River to travel from the Mississippi River system to the Great Lakes.
  - Friends cautions against a solution to this issue that would negatively impact the Chicago River.
  - Currently, the breeding front has remained stationary 70 miles from the lake.
- Notorious plant species include buckthorn and garlic mustard.
- Note: frequently “invasive” is used to indicate that a species is not local. However, there can be exotic (non-native) species that are non-invasive. Typically the invasive species that we hear the most about is exotic.

## **V. Focus Area Three: Policy and Planning**

### **River Modification**

- Just as the river has influenced the development of Chicago, humans have influenced the course of the river.
- The best-known modification is the river’s reversal in 1900. The Chicago River initially flowed into Lake Michigan but was reversed by digging the 28-mile Sanitary and Ship Canal which cut through a subcontinental divide and connected the Chicago and Des Plaines rivers  
This was done for two primary reasons:
  - To divert polluted river water away from drinking water intakes on Lake Michigan (at that time sewers drained directly to the river).
  - To provide a permanent, reliable shipping route between the Great Lakes and Mississippi River watersheds.
- The Cal-Sag Channel was opened in 1922, which served the similar purpose of diverting the Calumet River system away from the lake.

- The majority of shipping for Chicago goes through the port in Calumet.
- A selection of other modifications include:
  - The North Shore Channel: This man-made, eight-mile, channel opened in 1910 to bring additional water from Lake Michigan after the river's reversal.
  - The Illinois and Michigan (I&M) Canal: This was the original shipping route connecting the Chicago River to Des Plaines River and opened in 1848. . It eliminated the need to portage (carry) boats over the subcontinental divide between the Chicago and Des Plaines rivers. The 96-mile canal was obsolete almost as soon as it opened, due to new railroad construction and use of larger ships that were too large for the narrow canal. The Sanitary and Ship Canal replaced it for use, though many parts of the I&M canal still exist.
  - Filling in tributaries to Bubbly Creek when the Stock Yards were open.
  - Creating the Skokie Lagoons in the 1930s and 40s to reduce annual flood/burn cycles and provide work during the Great Depression.
  - Straightening where the river enters the lake (it used to meander around a sandbar, entering around Madison rather than Wacker).
  - Dredging the canal that forms the eastern side of Goose Island in the 1850s.
  - Straightening the “south branch meander” near Chinatown in 1928 at a development now dubbed The 78.

### **Dams/Dam Removal**

- Dams have been in place on the Chicago River for more than 100 years. Originally, dams were to keep water within the river channel in times of low water. The dams on the river no longer serve a purpose.
- Dams are a hazard to paddlers and block passage of some aquatic wildlife.
- Friends has been advocating for dam removal since early 2000s.
- In 2013, Gov. Pat Quinn announced the Illinois Dam Removal Initiative. As part of this, four dams on the Chicago River were slated to be removed or modified:
  - Winnetka Road Dam in Winnetka (removed in 2015).
  - Chick Evans Dam in Morton Grove.
  - Tam O'Shanter Dam in Niles.
  - North Branch Dam (River Park, Chicago)—modification only, to maintain the separation between the North Branch and North Shore Channel (removed in 2018).
    - Removal of these dams will open up 55 additional river miles to fish, mussels and other water creatures.
    - Removal/modification of the remaining three dams is in planning process.

## Tunnel and Reservoir Plan

- The Tunnel and Reservoir plan, also known as the “Deep Tunnel” or TARP, is a system built to contain Combined Sewer Overflows (CSOs), thereby improving water quality and reducing flooding.
- The system consists of a series of underground tunnels and three open-air reservoirs designed to hold untreated stormwater and wastewater that would otherwise be discharged into the river in the event of a CSO.
- The project began in 1972 and is scheduled to be completed in 2029.
- When finished, the system will be able to hold 20.5 billion gallons of water, enough to fill Willis Tower more than 43 times.
- The tunnels are up to 300 feet underground.
- All 109 miles of tunnels and two of the three reservoirs are completed. McCook Reservoir Stage 1 was completed in 2017 and provides 3.5 billion gallons of storage. Stage 2 will be completed in 2029 and provide 6.5 billion gallons of storage. The McCook Reservoir will provide more than \$143 million per year in flood damage reduction benefits to 3,100,000 people in 37 communities.
- Since various parts of TARP have been completed, CSOs have reduced significantly.
- Components:
  - Tunnels: 109 miles, 2.3 billion gallon capacity, completed in 2006—various parts in service since 1985.
  - Majewski Reservoir (O’Hare): 350 million gallons, serving Upper Des Plaines, completed 1998.
  - Thornton Reservoir: 7.9 billion gallons, serving Calumet River, completed 2015.
  - McCook Reservoir: 10 billion gallons, serving Chicago and Des Plaines rivers.
    - Stage 1: opened in 2017: 3.5 billion gallons.
    - Stage 2: opening in 2029: 6.5 billion gallons.



## Overflow Action Days/CSOs

- Overflow Action Days is a Friends initiative to conserve water on rainy days.
- In many parts of the city, stormwater (from streets, parking lots and roofs) and wastewater (from houses, businesses, etc.) all go in one pipe, and the system can be overwhelmed when it rains, leading to a Combined Sewer Overflow (CSO) where untreated sewage is released into the river.
- We do not paddle for 48 hours after a CSO, though we often paddle past outfalls.

- As little as 0.3 inches of rain can trigger a CSO—therefore, the more water we save, the more room there is for stormwater.
- Conserving water at home helps reduce the load on sewer systems when it's raining. We encourage people to put off water-intensive processes like laundry and washing dishes until the system has time to recover.
- People interested in learning more can sign up on our website for Overflow Action Day alerts, which are emails that remind us to be thinking about our water use when rain is forecast and they also alert people where and when the outlets were opened into the Chicago River system.
- The Deep Tunnel significantly reduces CSOs.
- A note that not all of Chicago is served by combined sewers. Some municipalities have separated sewers, with stormwater and wastewater in individual pipes.

### **Water quality improvements/disinfection**

- Water quality on the Chicago River has improved significantly over the years to the point where it is now swimmable in many sections, and healthier for aquatic life.
- Selection of factors contributing to better water quality:
  - More stringent water quality standards to protect river users and aquatic life.
  - Friends began advocating for improved standards in 2000. The decade-long battle was the longest court case before the Illinois Pollution Control Board.
  - Data from Friends' canoe program helped show that people were using the river for recreation, and standards needed to be in place to protect them.
  - As a result, effluent disinfection at two of the three major water reclamation plants began, significantly reducing bacteria in river, the largest threat to humans. Disinfection began in 2016. Bacteria is now reduced to levels appropriate to accommodate swimming! Staff from Friends, the Metropolitan Water Reclamation District, the Metropolitan Planning Council, the National Park Service and more celebrated by jumping into Cal-Sag Channel for a swim in fall of 2016.
  - Efforts have been launched to reduce pollutants such as chlorides, which are used to melt snow and ice on roads.
  - TARP/Deep Tunnel coming online: significantly reduces amount of combined sewer overflows into the river
  - Nutrient resolution: Landmark MWRD resolution in 2017 reduced phosphates in the river and will lead to higher dissolved oxygen levels.
  - Habitat restoration projects: help capture and filter stormwater runoff and reduce erosion.
  - Green infrastructure project: green roofs, permeable pavers, etc.

## River Development

- Development along the river has changed significantly over the years.
- Historically, the river was used as a dumping ground for industry (Union Stock Yards, factories, etc.), which caused considerable degradation in water quality and biodiversity.
- Many older riverside buildings were constructed in a way to hide the river from tenants and visitors.
- As public perception of the river began to improve, developers began to consider the river as a resource and inspiration rather than as a deterrent.
- Today, river-edge properties are prime real estate, with several buildings under construction.
- Friends of the Chicago River's planning committee works with developers to incorporate river-sensitive design, habitat, and public access.
- In 1990, the City of Chicago approved the Chicago River Corridor Design Guidelines and Standards governing river-edge development drafted by Friends' Planning committee. One of the requirements in the standards is that developers may not build within 30 feet of the shoreline. These guidelines resulted in much-improved river edge developments with successes including: the development of miles of continuous trail, design solutions that separate public and private landscapes visually without impeding public access or river views, and the first Planned Development Ordinance that requires in-stream habitat.



## VI. Membership or Donate

- Friends encourages individuals, families, and businesses to join Friends as members to contribute directly to improving the health and vitality of the Chicago River system.
- Membership can be paid as a one-time annual payment or through a monthly contribution.
- Membership perks vary by level. All levels receive:
  - A subscription to Friends' *The River Reporter* newsletter, filled with important information on issues that affect the Chicago River system plus a calendar of river-related events.
  - Volunteer bulletins, email actions alerts, and other opportunities for hands-on involvement.
  - Free admission to the Bridgehouse Museum.
  - Invitations to Friends' special events and discounts on canoe trips and other events.
- Membership starts at \$10 for volunteers, students, and teachers and gradually increases to align with personal budgets.
- The Otter Society is Friends' major donor program. Anyone interested in this level should be directed to Friends' director of development.
- The Tributary Committee is Friends' young professional group. Anyone interested in joining this group should be directed to Friends' director of development .
- Visit our website to become a member: [www.chicagoriver.org](http://www.chicagoriver.org)