

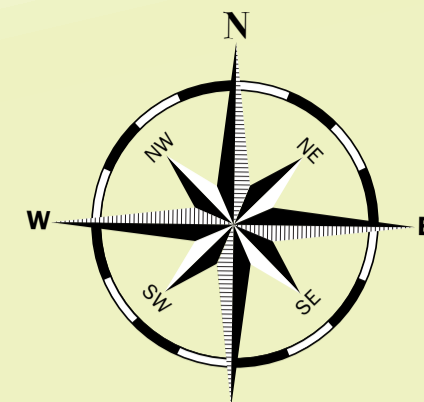
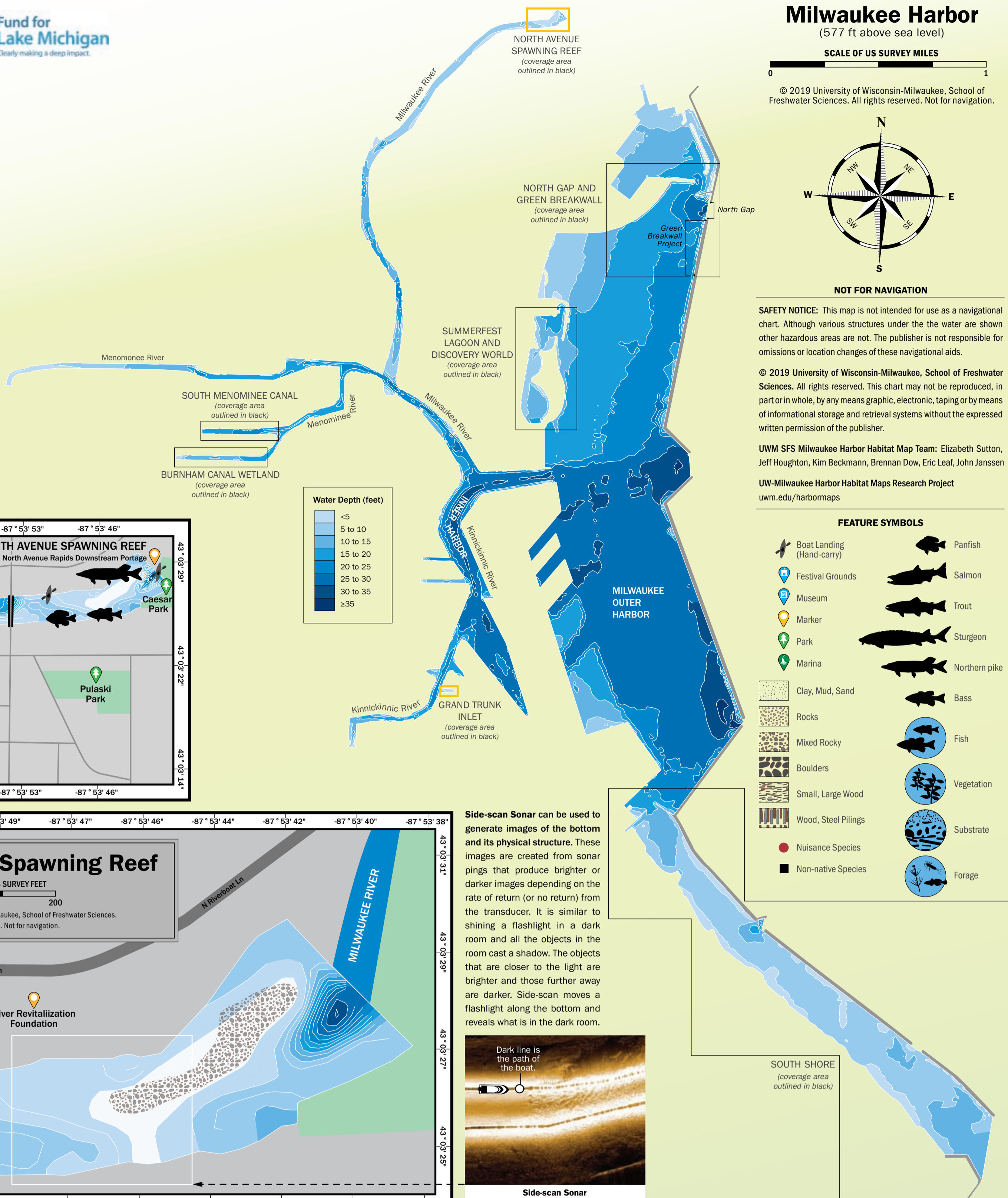
HABITAT HOTSPOTS

North Avenue Spawning Reef

The North Avenue Dam was constructed in 1835, the first dam on the Milwaukee River. It supported a thriving milling and manufacturing community, drawing water off via a canal system to support area factories with power and shipping. The canal closed in 1884, but the dam remained until the 1990s, cutting fish off from important habitat opportunities.

Today, with the dam gone, we find a wide variety of species moving up and down the river, from Northern Pike to Darters, while Salmon and Lake Trout move up the river from Lake Michigan to spawn. Birds such as heron and other terrestrial wildlife including beavers and otters make their homes here.

A Spawning Reef was constructed a few years after the dam was removed to encourage the iconic Lake Sturgeon to reproduce naturally in the river. Will it succeed? We won't know for a few more years as the Lake Sturgeon stocked in the river aren't old enough—a female matures to 26 years of age before she'll lay eggs. But in the meantime, other species such as smallmouth bass are already taking advantage of the human-made underwater habitat.



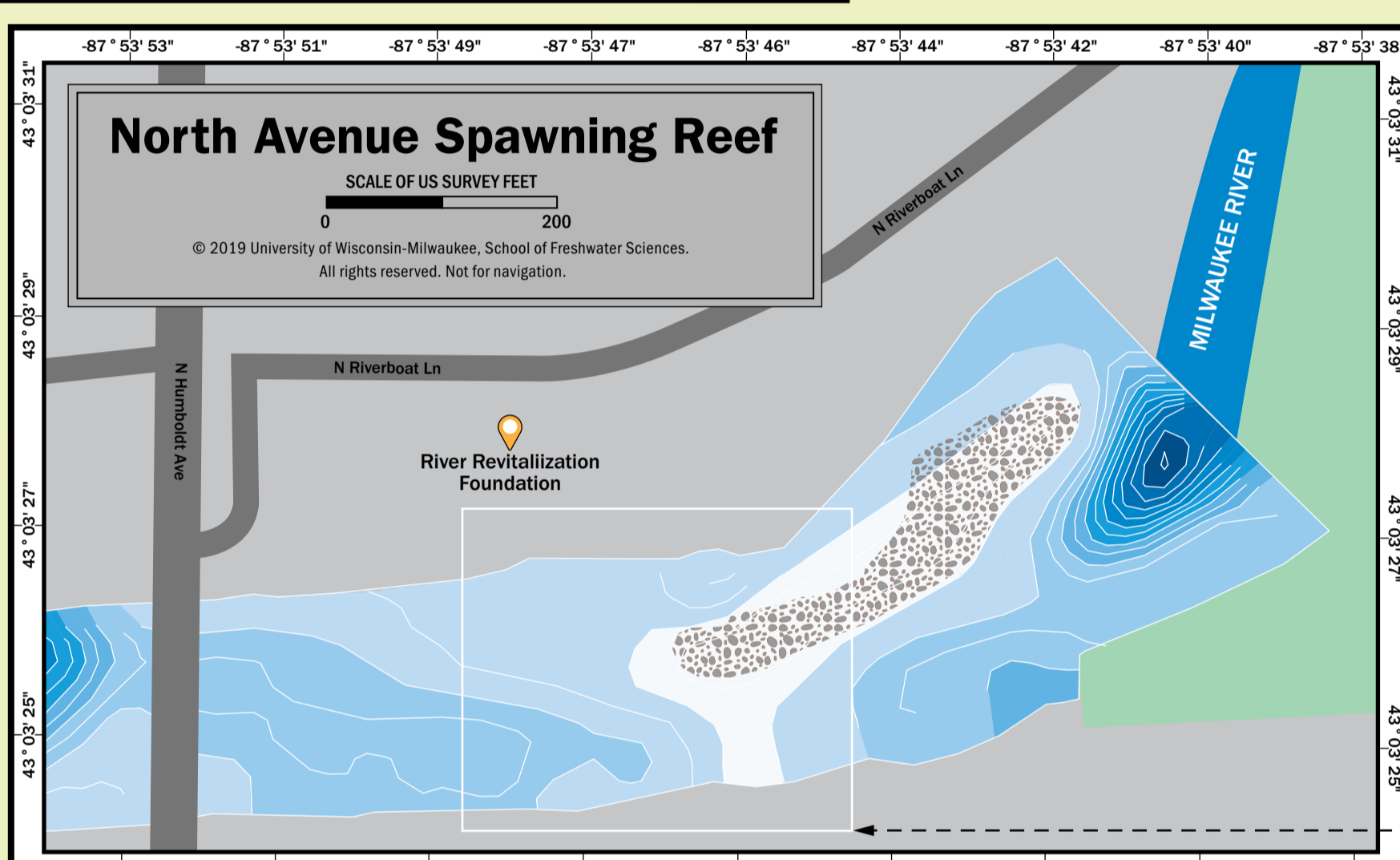
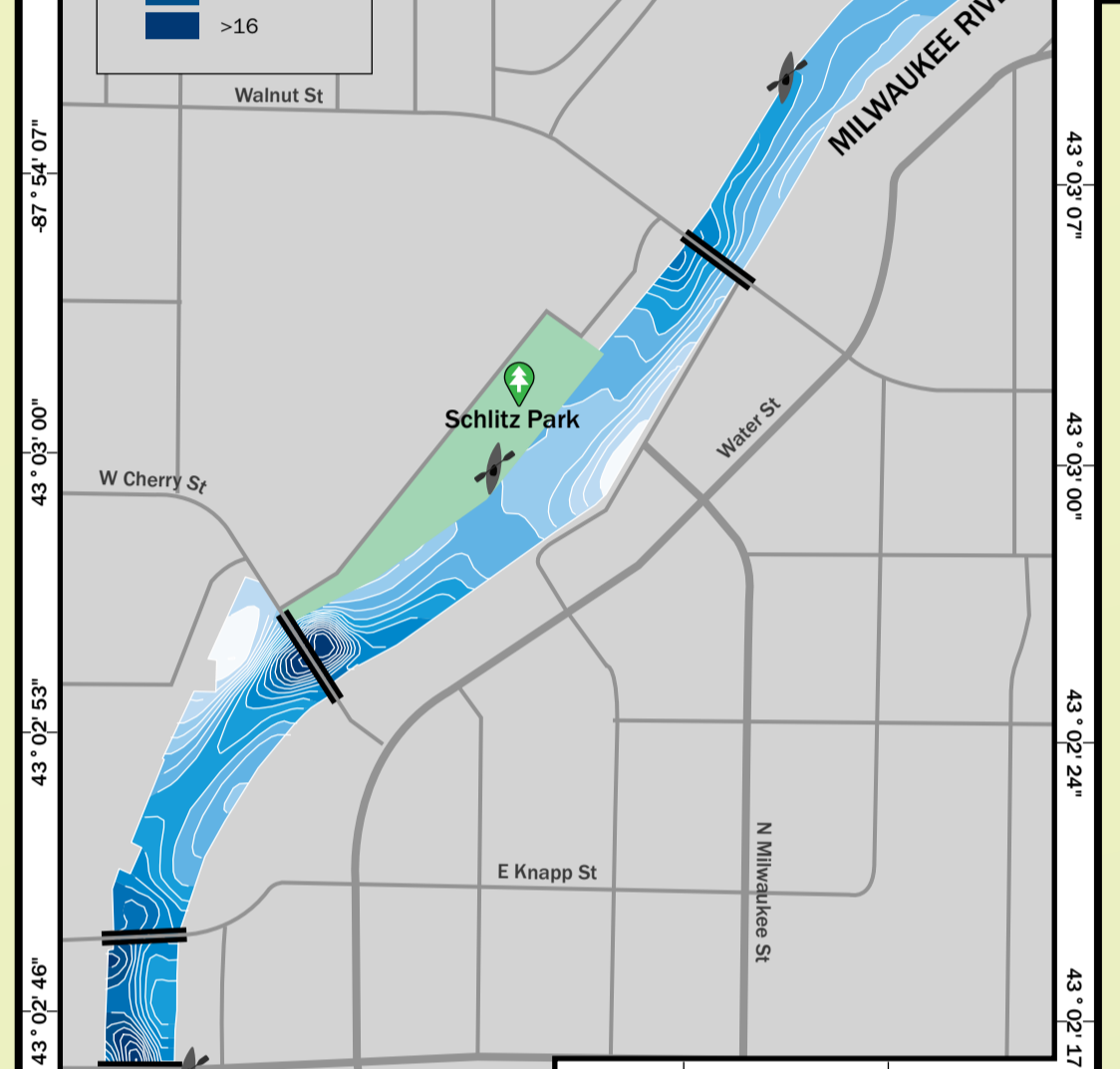
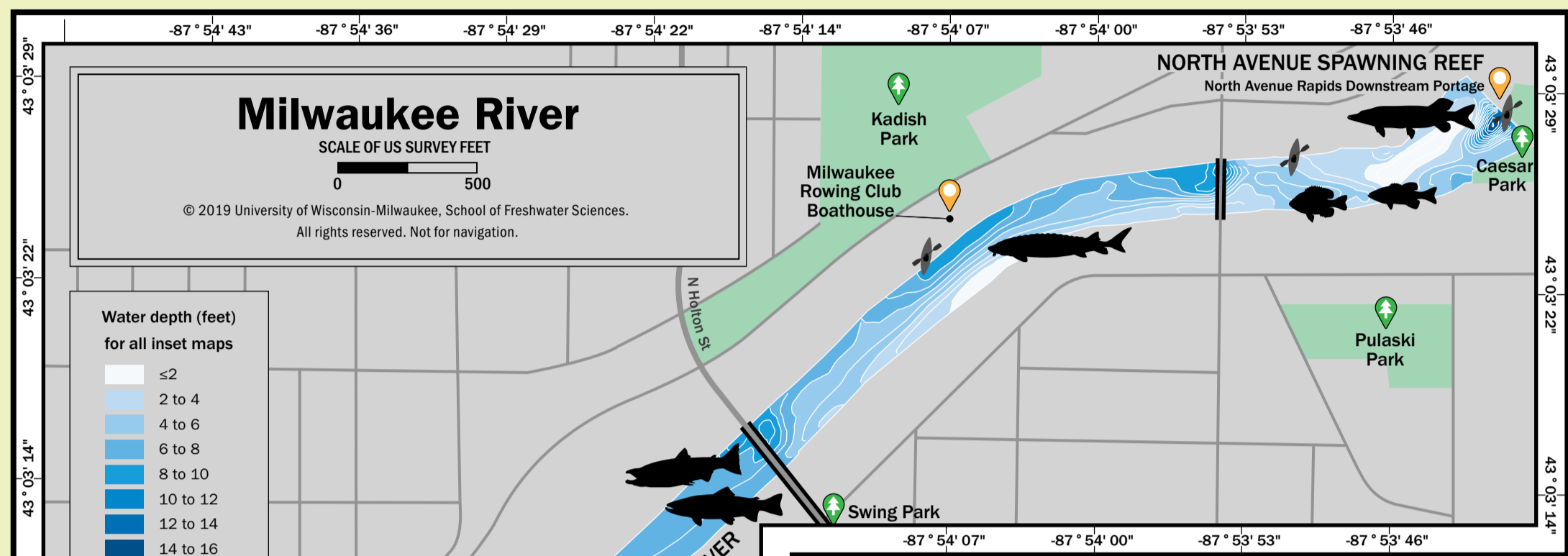
NOT FOR NAVIGATION

SAFETY NOTICE: This map is not intended for use as a navigational chart. Although various structures under the water are shown other hazardous areas are not. The publisher is not responsible for omissions or location changes of these navigational aids.

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UW-Milwaukee Harbor Habitat Maps Research Project
uwm.edu/harbormaps



Side-scan Sonar can be used to generate images of the bottom and its physical structure. These images are created from sonar pings that produce brighter or darker images depending on the rate of return (or no return) from the transducer. It is similar to shining a flashlight in a dark room and all the objects in the room cast a shadow. The objects that are closer to the light are brighter and those further away are darker. Side-scan moves a flashlight along the bottom and reveals what is in the dark room.

Dark line is the path of the boat.



Dam Removal Creates Habitat Connectivity

Dams like those at North Avenue and Estabrook Park blocked fish passage in the Milwaukee River, cutting Lake Michigan and the Harbor off from the River itself. Before the North Avenue Dam was removed there were only a few species of carp and other fishes living north of the dam. Since the removal of the North Avenue Dam numerous species of fish move freely up and down the River. This includes Salmon and Lake Trout, which live in Lake Michigan but can spawn upstream.

Photograph: Harold Mayer, North Avenue Dam, 1974. American Geographical Society Library, UWM Libraries

HABITAT HOTSPOTS

Grand Trunk Inlet

Before European settlement the area surrounding the Milwaukee Harbor and the lower Kinnickinnic River was all wetland. Stands of wild rice and other native vegetation grew in abundance, and wildlife was prevalent. Today Milwaukee's industrial inner harbor region is mostly infill. The wetlands are all gone, with one important exception: a small patch of contaminated land known as the Grand Trunk.

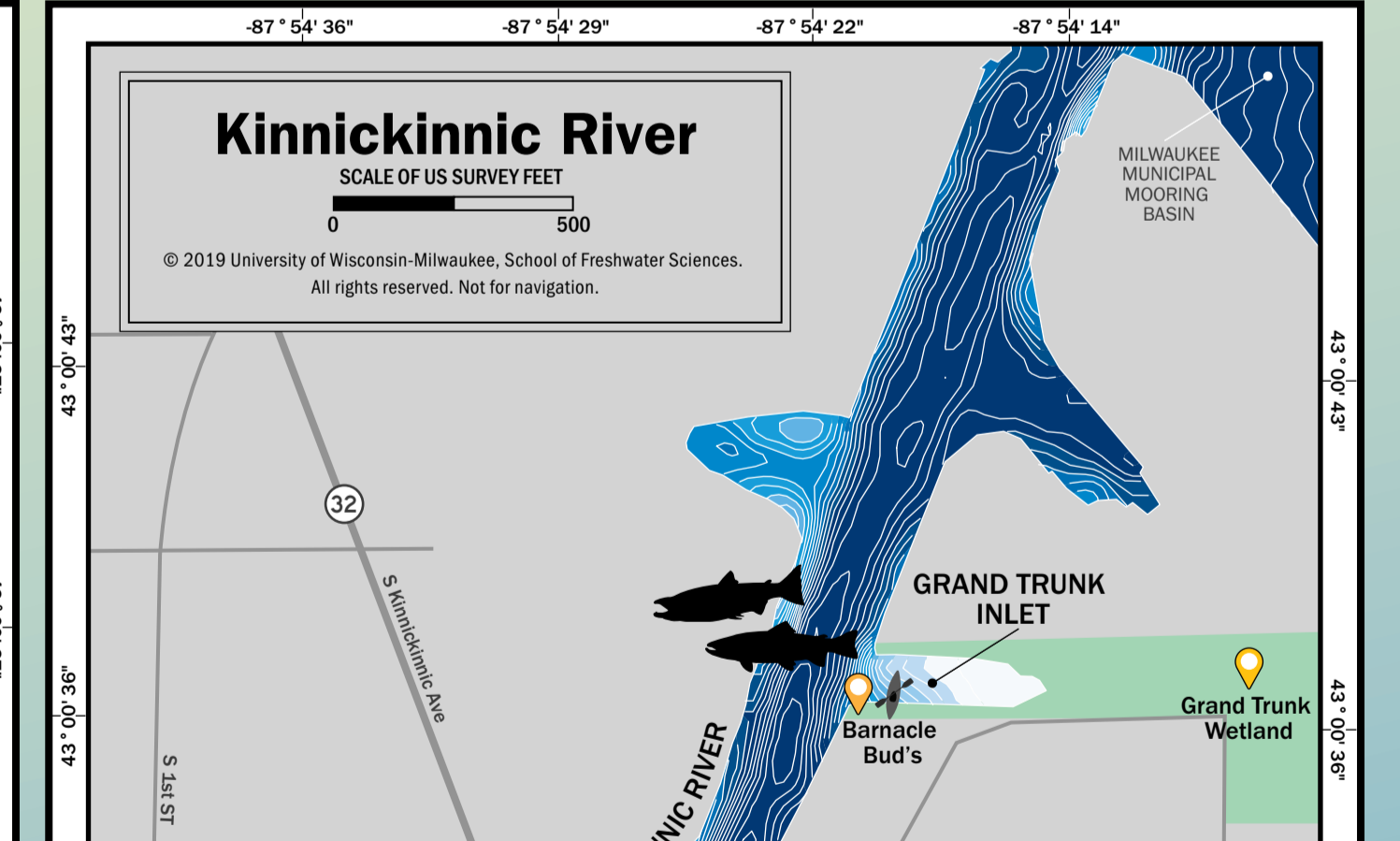
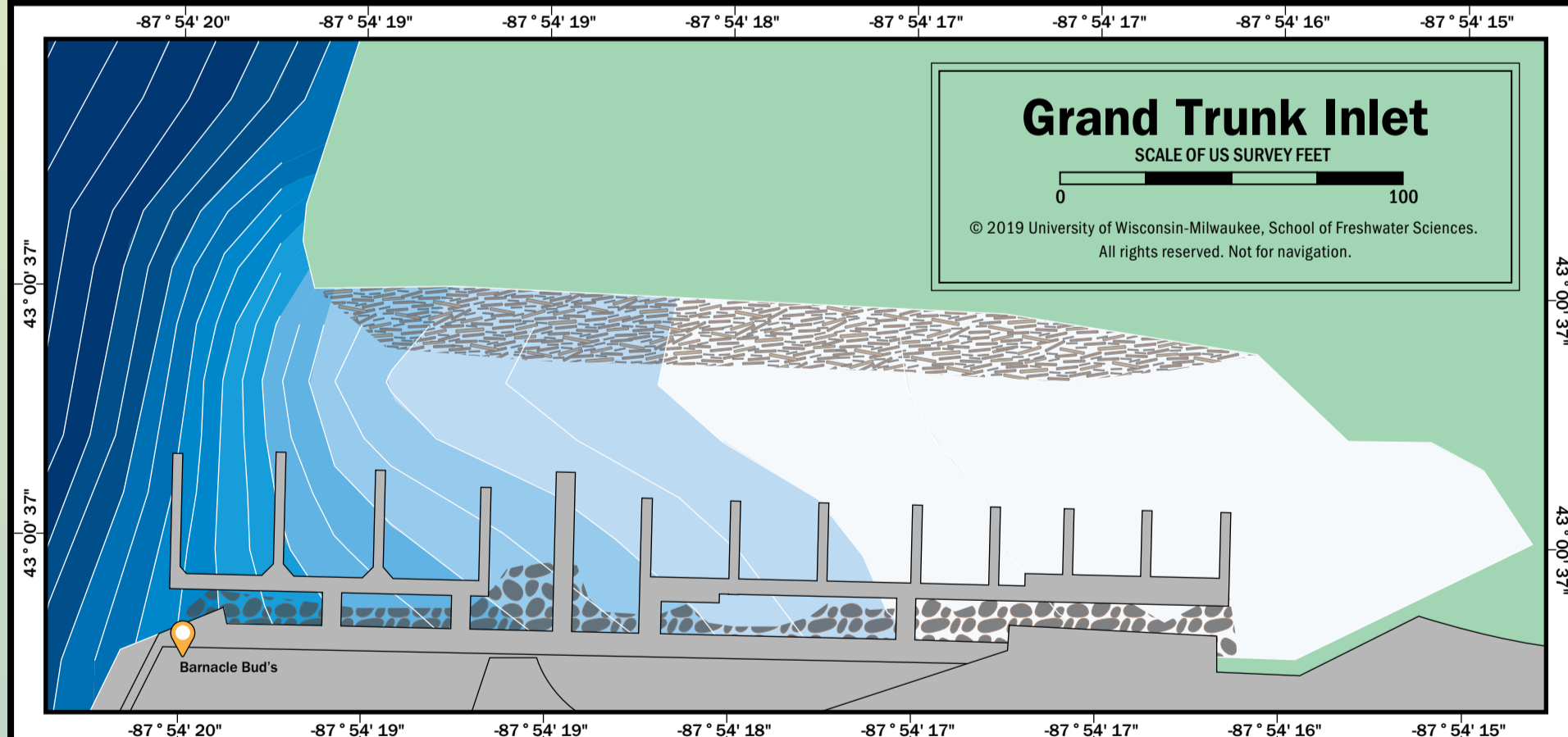
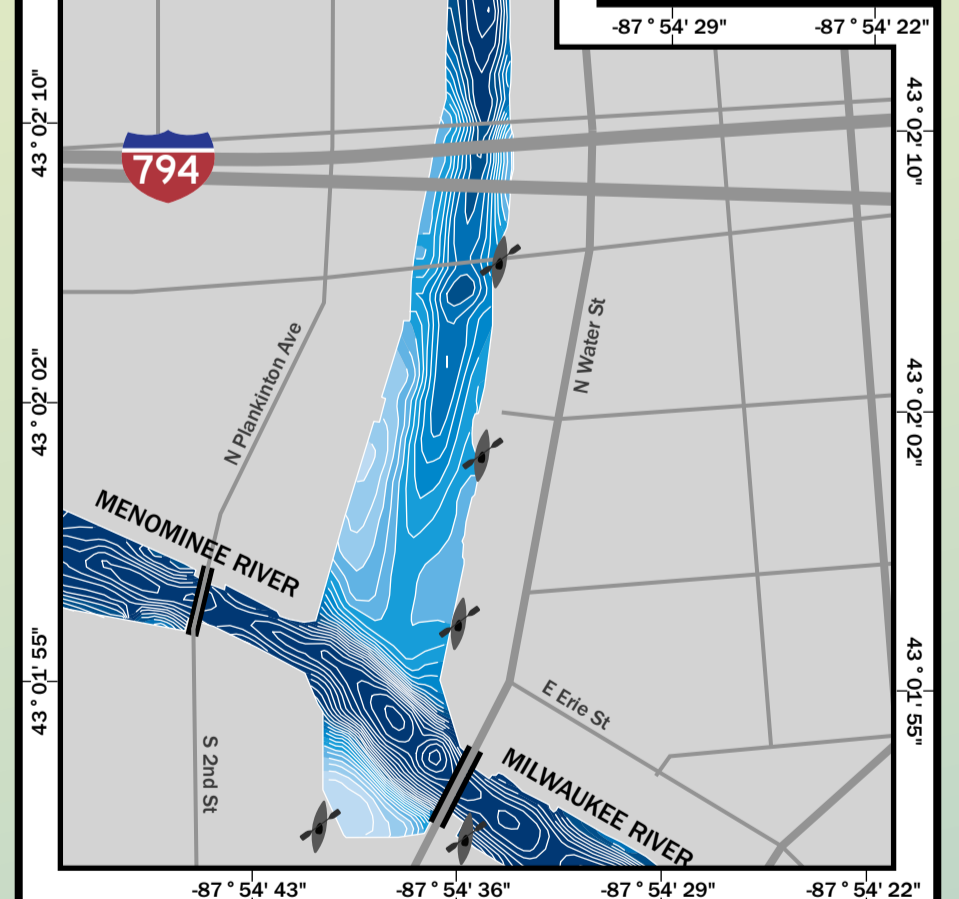
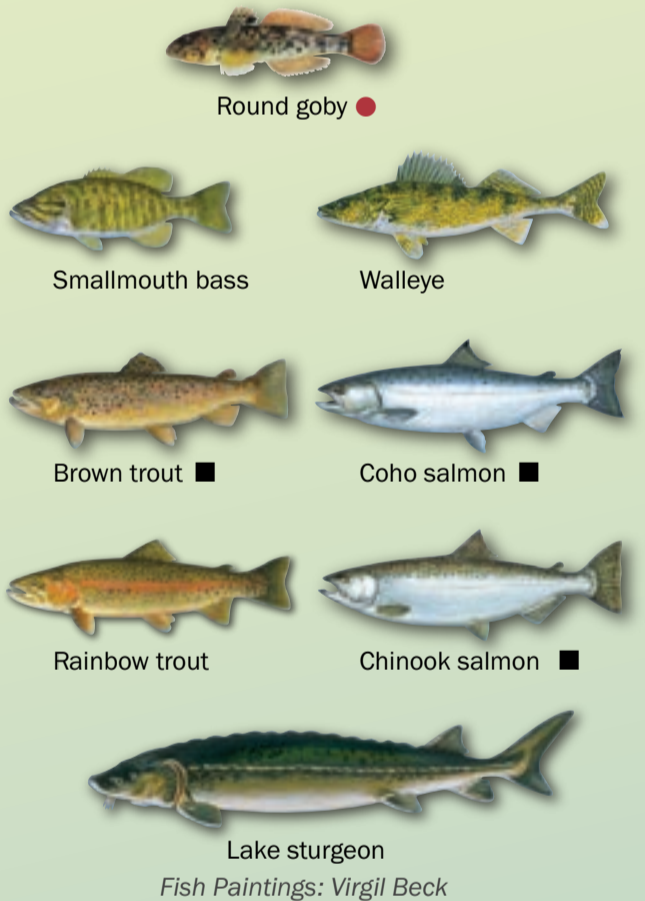
The Grand Trunk Wetland—so named because it was once the site where the Grand Trunk Railway loaded cars onto a ferry for transport across Lake Michigan—is home to wildlife such as turkey, fox, mink, amphibians and even an endangered snake known as the amphibia and even the Butler's Gartersnake, a species of Special Concern in Wisconsin. The wetland drains into a small navigation channel and then into the Kinnickinnic River across from the old Solvay Coke site just south of the Inner Harbor. Properly developed, it can be an important habitat asset for the Milwaukee Harbor.

FISH

Catch and Release for Your Health and the Health of the Ecosystem

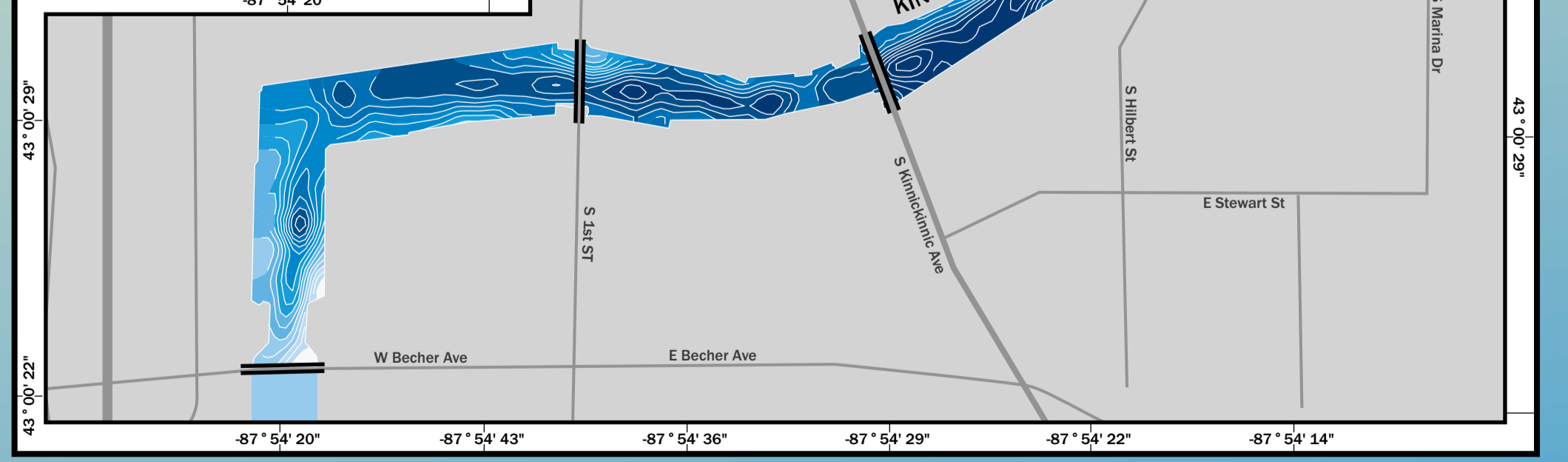
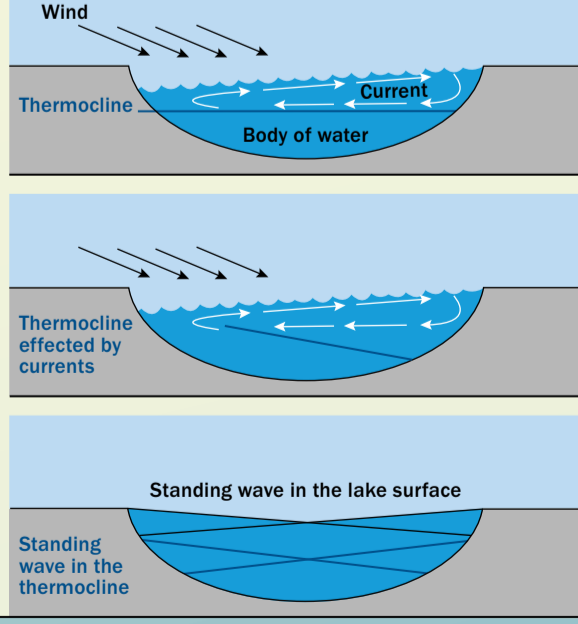
There is a vibrant sport fishery in the Milwaukee River Estuary, and the makers of this map strongly encourage fishing in these waters. They also encourage the practice called "Catch and Release." Catch and release is the practice of returning anything you catch to the water. There are many good reasons anglers should consider this in the Milwaukee Harbor system.

Releasing large sport fish back to the wild ensures that large healthy adult fish are present during spawning season, helping to maintain and grow the population and diverse fishery. They also provide food for other animals, meaning the entire ecosystem is stronger. While water quality is vastly improved since Milwaukee's industrial heyday, there is still a legacy of contamination and the Milwaukee River Estuary remains and EPA designated Area of Concern. Consuming fish caught in the Harbor may not yet be a healthy choice, depending on species and how the fish is prepared. Catch and release allows the thrill of sport fishing while maintaining your health and that of the ecosystem as a whole.



The Seiche Effect

Water levels in the Milwaukee Harbor are tied to Lake Michigan water levels—which in turn are tied to rain and evaporation—and the direction the wind is blowing. When the wind blows water in Lake Michigan westward, water levels in the Harbor rise dramatically. This is called the Seiche. At times when water levels (aka, the Seiche) are high, the Grand Trunk Wetland will be connected directly to the Harbor. However, when the wind blows water levels east towards Michigan, water levels will drop and the Grand Trunk Wetland will be cut off. This creates another important habitat opportunity in the Harbor and could be used to support the spawning of species such as Northern Pike.



Milwaukee Harbor Habitat Map design: Kim Beckmann