



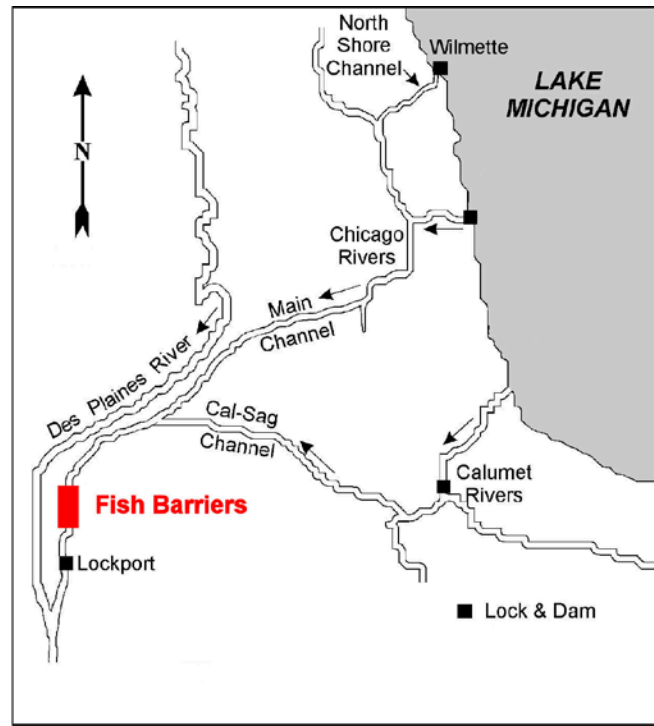
US Army Corps
of Engineers®

Chicago Sanitary & Ship Canal Dispersal Barrier System

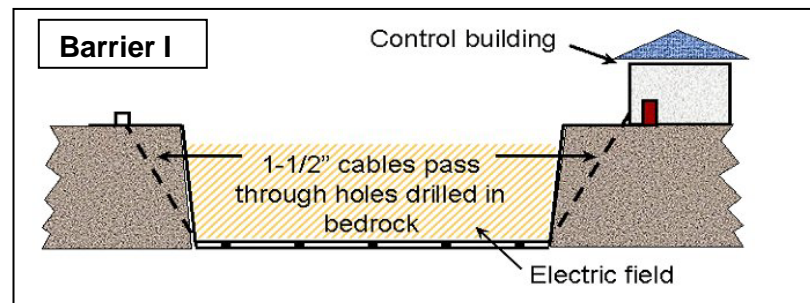
Location and Purpose: The dispersal barriers are located in the Chicago Sanitary and Ship Canal (CSSC), which is a man-made waterway creating the only continuous waterway connection between Lake Michigan and the Mississippi River basin. The dispersal barrier system was developed to prevent the spread of invasive fish species between these watersheds.

Project History: In April 2002 the Corps began operation of the first barrier (Barrier I) as a demonstration of a new technology for preventing the spread of invasive fish species.

Barrier I, which is located at river mile 296.5 in Romeoville, IL, is formed of steel cables (see diagram below right) that are secured to the bottom of the canal. A low-voltage, pulsing DC current is sent through the cables, creating an electric field in the water. The electric field is uncomfortable for fish and they do not swim across it.



In 2004, the Corps initiated construction of a permanent barrier (Barrier II) to prevent the migration of fish, including Asian carp, between the watersheds. Barrier II, which is located 800 to 1,300 feet downstream of Barrier I, also uses a pulsed electric field, but includes several design improvements identified during monitoring and testing of Barrier I.



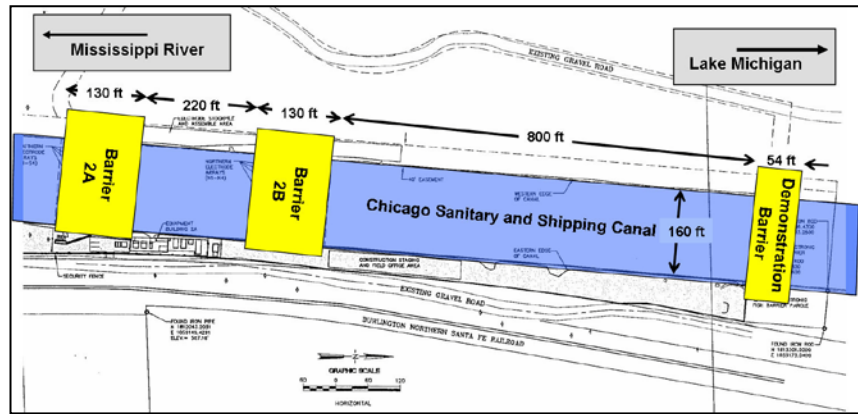
Barrier II is able to generate a more powerful electric field over a larger area and consists of two sets of electrical arrays and control houses, known as Barriers IIA and IIB. Each control house and set of arrays can be operated independently, but ultimately the goal is to operate both concurrently.

In 2007, Congress authorized the Corps to complete Barrier II, to upgrade Barrier I and make it permanent, and to operate the barrier system at full federal cost.

Status: Barrier I and Barrier IIA are operating continuously. Barrier IIB is partially constructed.

Due to its original demonstration status, Barrier I was designed and built with materials that were not intended for long-term use. Significant repairs were successfully completed at Barrier I in

October 2008. These repairs will allow Barrier I to remain in service for several more years until Barrier IIB is completed and fully functional. Construction of Barrier IIB is underway and will be completed in Fall 2010. Once Barrier II is fully operational, Barrier I will be taken off line and replaced with a more permanent facility.



Barrier IIA was activated in April 2009 at the same operational settings as Barrier I. However, a study by independent researchers indicated that operating parameters used at Barrier I may not be effective for deterring smaller fish, so the Corps initiated an ongoing research program to identify the optimal operating settings for the dispersal barriers. Based on initial results from this research, the operating settings at Barrier IIA were increased in August 2009 to levels currently identified as optimal for repelling all sizes of fish. The operating settings at Barrier I were not adjusted because the equipment at Barrier I is unable to operate at the higher settings.

The Corps also participates in a multi-agency monitoring program to identify the location of Asian carp relative to the barriers. In the summer of 2009 the Corps contracted with the University of Notre Dame to deploy environmental DNA monitoring (eDNA), a new monitoring method developed at Notre Dame. This method does not rely on direct observation of Asian carp to evaluate their potential presence. Asian carp DNA has been detected at several locations upstream of the barriers including on the edge of Lake Michigan in Calumet Harbor. However, no Asian carp have been captured or seen above the barriers and it is unknown how any Asian carp present might have gotten to these upstream locations.

The Corps is completing a study of ways to improve the effectiveness of the barrier system. This study is being completed in stages and interim reports will be released as each stage is completed. An initial report was completed that recommended construction of physical barriers to prevent the potential bypassing of the barriers during high water conditions in the neighboring Des Plaines River and Illinois & Michigan Canal. A construction contract for these physical barriers was awarded in April 2010 and construction will be completed in October 2010. The other major areas of study are completing the research on the optimal operating parameters to maximize barrier effectiveness, reducing the risk of assisted transit of live fish through or around the barriers (via ballast water, bait buckets, etc.), reducing existing carp populations, evaluating use of other types of barriers or deterrents, and modified lock and waterway operations.

Great Lakes Mississippi River Interbasin Study: The Corps is also completing a comprehensive investigation of the feasibility of other approaches to prevent the inter-basin transfer of aquatic nuisance species between the Great Lakes and Mississippi River basins. The feasibility study is a separate project from the barrier system. It was initiated in 2009.

For more information:

Visit: www.lrc.usace.army.mil or www.asiancarp.org/rapidresponse

Contact: USACE-Chicago District at 312-846-5330 or 312-846-5568