

# **Against the Current:**

*The Attempt to Keep Asian Carp Out of the Great Lakes*

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*by Drew YoungeDyke*

**Introduction**

In the man-made channels connecting the Mississippi, Illinois and Des Plaines Rivers to Lake Michigan lurk fish with the potential to dramatically and permanently alter the biomass of the Great Lakes. Asian carp have been found in the Chicago Area Waterway System, and the effort to keep this injurious species out of Lake Michigan has sparked a multi-state legal battle, resurrecting an 81-year old Supreme Court case and a new request that the System's locks be closed. At stake is the \$70 million shipping industry that relies on the locks, the \$7 billion fishing industry that relies on the lakes and the invaluable ecosystem and natural resources that comprise world's largest freshwater lake system.<sup>1</sup>

**I. Background**

**Asian Carp**

Asian carp are members of the *Cyprinidae* family. The concern is over three subspecies: bighead carp (*aristichthys nobilis*), silver carp (*hypophthalmichthys molitrix*) and black carp (*mylopharyngodon piceus*)<sup>2</sup>. Bighead carp can grow to five feet in length and weigh over 100 pounds. As filter-feeders, they are capable of consuming up to 40% of their body weight each day through the use of gill rakes specially adapted for collecting large

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<sup>1</sup> Noah D. Hall, The North American Great Lakes, in *The Evolution of the Law and Politics of Water*, 281 (J.W. Dallepanna and J. Gupta eds., Springer Science and Business Media M.V. 2009).

<sup>2</sup> Henry C. Hyde, Roanne S. Ross & Leslie Sturmer, Technology Assessment of Aquaculture Systems for Municipal Wastewater Treatment 13 (August 1984); Asian Carp Regional Coordinating Comm., Draft Asian Carp Control Strategy Framework 4-5 (Feb. 2010), <http://www.asiancarp.org/RegionalCoordination/documents/AsianCarpControlStrategyFramework.pdf>.

amounts of plankton, starving out native species.<sup>3</sup> They are analogous to an uninvited wedding guest who gorges on the buffet table (plankton) before the other guests (native fish populations) can fill their plates.



**Figure 1: Bighead Carp<sup>4</sup>**

Silver carp can grow to four feet in length, weigh 100 pounds, have similar feeding habits to bighead carp and can jump out of the water when disturbed by boat motors, risking the safety of boaters on waters the carp inhabit.<sup>5</sup> They are freshwater fish which occur naturally in large rivers, lakes and backwaters with flooding access to larger rivers. They can adapt to a wide range of water temperatures, from 40 degrees Celsius down to

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<sup>3</sup> The Threat Posed to the Great Lakes Basin by Asian Carp Before the House Subcommittee on Fisheries and Oceans 2 (November 3, 2005) (statement of Gerald A. Barnhart, Chairman of the Great Lakes Fishery Commission) [http://www.glf.org/fishmgmt/testimony\\_AsianCarp.pdf](http://www.glf.org/fishmgmt/testimony_AsianCarp.pdf).

<sup>4</sup> Asiancarp.org, [http://www.asiancarp.org/Images/Bighead\\_3-28-021.jpg](http://www.asiancarp.org/Images/Bighead_3-28-021.jpg), (last visited May 5, 2010).

<sup>5</sup> Sandra Svoboda, Fishing for truth, <http://www.metrotimes.com/news/story.asp?id=14977> (April 14, 2010).

four degrees Celsius<sup>6</sup>. Black carp can grow as long as seven feet and weigh 150 pounds, feeding on snails and mollusks. One black carp can consume ten tons in its lifetime.<sup>7</sup>



**Figure 2: Silver Carp<sup>8</sup>**

Asian carp were imported into the United States to clean out retention ponds and tanks in Southern aquaculture facilities. Their voracious eating habits allowed them to clean out algae that accumulated in the tanks. Bighead carp were imported from China in 1972, silver carp were imported from China and eastern Siberia in 1973, and black carp were mistakenly included in shipments of grass carp from Taiwan and Malaysia in 1962,

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<sup>6</sup> Proposed Rule to List Silver Carp as Injurious Wildlife Species, 71 Fed.Reg. 52,305, 52,307 (July 10, 2007) (codified at 50 C.F.R. pt. 16).

<sup>7</sup> *The Threat Posed to the Great Lakes Basin by Asian Carp*, *supra* at 2.

<sup>8</sup> Nerissa Michaels, AP Photo, Illinois River Biological Station via the Detroit Free Press <http://www.theoaklandpress.com/articles/2010/01/28/news/doc4b620fd8a46e5972236701.txt>. (last visited May 5, 2010).

since juvenile black carp resemble adult grass carp. Black carp were also intentionally introduced in the 1980's.<sup>9</sup>

The Environmental Protection Agency (EPA) also funded studies of the potential for using Asian carp and other aquaculture techniques to treat municipal wastewater.<sup>10</sup> In addition to cleaning retention ponds, Asian carp were believed to be useful for cleaning and filtering human sewage and swine manure in the 1970's. Federal and state agencies including the EPA, the Arkansas Department of Game and Fish and possibly the State of Illinois funded and conducted studies of Asian carp and may have participated in their release into ponds.<sup>11</sup> Asian carp were raised at six federal, state and private facilities and municipal sewage ponds by the mid-1970's.<sup>12</sup>

Asian carp escaped from the Southern aquaculture facilities and retention ponds during the Mississippi River flooding of the late 1980's and early 1990's.<sup>13</sup> The biggest flood, in 1993, covered 400,000 miles and parts of nine states, spilling over the tops of 1,000 levees and lasting almost 200 days in some areas.<sup>14</sup> Once established in the Mississippi River, Asian carp simply took over. In a statement given to the House

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<sup>9</sup> *The Threat Posed to the Great Lakes Basin by Asian Carp, supra* at 2 .

<sup>10</sup> Hyde, *supra*, 12-14; Svoboda *supra*.

<sup>11</sup> Svoboda, *supra*: "The public sectors, including universities and state and federal entities, have contributed significantly to at least one importation of the black carp, the spawning and probable release into natural waters of the silver and bighead carps, and the distribution and use of all three species," (quoting a 2008 report from researchers at the National Aquaculture Research Center in Stuttgart, Ark., and the University of Arkansas).

<sup>12</sup> Press Release, U.S. Fish & Wildlife Service, Agency Seeks Scientific, Economic Information On Bighead Carp, a Potential Injurious Species Candidate (September 17, 2003) <http://www.fws.gov/news/newsreleases/r3/1E06DFF6-C8AC-491F-90E672EF6C2216FC.html>.

<sup>13</sup> *The Threat Posed to the Great Lakes Basin by Asian Carp, supra* at 2.

<sup>14</sup> Lee W. Larson, The Great Flood of 1993 (June 1996) [http://www.nwrfc.noaa.gov/floods/papers/oh\\_2/great.htm](http://www.nwrfc.noaa.gov/floods/papers/oh_2/great.htm).

Subcommittee of Fisheries and Oceans on November 3, 2005, Gerald A Hartman, Chairman of the Great Lakes Fishery Commission, said:

Since their escape just over a decade ago, bighead and silver carp have besieged the Mississippi River basin and Illinois River system. Between 1991 and 1993, the Upper Mississippi River Long Term Resource Monitoring Program documented a 100-fold increase in Asian carp numbers in an area known as Pool 26, which is on the Illinois River upstream of St. Louis. Commercial harvest of bighead carp in the Mississippi River Basin increased from 5.5 tons to 55 tons between 1994 and 1997. In the fall of 1999, an investigation of a fish kill in the off-channel waters of a National Wildlife Refuge near St. Louis documented that Asian carp made up 97% of the biomass. During this time period, commercial fisherman began reporting that they were abandoning their traditional fishing sites because they were unable to lift nets that were “loaded” with Asian carp. Between 1999 and 2000, the Upper Mississippi River Long Term Resource Monitoring Problem documented a 600-fold increase in Asian carp numbers in the LaGrange Pool, which is downstream of Peoria, IL. Sampling during the summer of 2000 in the offchannel areas and backwaters of the Mississippi River downstream from St. Louis documented the presence of bighead carp at a ratio of 5:1 to native paddlefish (*Polyodon spathula*). They continue to migrate northward at a steady pace.<sup>15</sup>

### **Ecological Impact**

Because of their ability to so thoroughly dominate an ecosystem, silver carp have been listed as an injurious species under the Lacey Act, making it illegal to transport them across state lines.<sup>16</sup> Injurious species are identified as those harmful to wildlife, wildlife resources, humans, and the interests of forestry, horticulture, or agriculture.<sup>17</sup> The listing occurred as a result of a request by the U.S. Fish and Wildlife Service (FWS) and a petition signed by 25 members of Congress representing states from the Great Lakes region. The

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<sup>15</sup> *The Threat Posed to the Great Lakes Basin by Asian Carp, supra* at 2.

<sup>16</sup> Lacey Act, 18 U.S.C. § 42; Rule listing Silver Carp as Injurious Species, 72 Fed. Reg. 37,459, 37,462 (July 10, 2007) (codified at 50 C.F.R. §16.13(2)(v)): "Due to the large size, fast growth rate, high food consumption rate and high reproductive potential of silver carp, competition for food and habitat with native planktivorous fishes and with post-larvae and early juveniles of most native fishes is likely high...It is highly likely silver carp would adversely affect fishes in the Great Lakes basin or other watersheds if they establish."

<sup>17</sup> 71 Fed. Reg. at 52,305.

petition requested that bighead and black carp be added to the list of injurious species as well.<sup>18</sup> In 2003, the FWS released a notice of inquiry into listing bighead carp as injurious species, but they have not yet been listed as such.<sup>19</sup>

In addition to starving out native sport-fish, the voracious eating habits and high reproduction rates of Asian carp could have a harmful impact on endangered species in the Great Lakes. Of the 116 fish and 70 mussel species on the Federal List of Endangered or Threatened Wildlife, silver carp share feeding and habitat requirements with 40 fish and 25 mussel species on the list.<sup>20</sup> This means that Asian carp will directly compete for food and habitat with Great Lakes aquatic species that are already on the brink of extinction.

The ecosystems and fisheries of inland waters connected to the five Great Lakes are also at risk. The majority of Michigan's major rivers and lakes have unimpeded access to the Great Lakes, and Asian carps' ability to adapt to the Mississippi River basin demonstrates their potential to invade inland waters in the Great Lakes basin.<sup>21</sup> This theory is supported by the Great Lakes Fishery Commission (GLFC). In a letter to the FWS in response to the Review of Information Concerning Bighead Carp, then-GLFC Chairman Bernard Hansen said, ""If bighead carp are allowed entry into the Great Lakes and connecting waters, we expect that the species will quickly and extensively establish itself in the Great Lakes and *connected waters*, as have other invasive species... Once a sufficient number have accessed the Great Lakes, we believe that bighead carp will quickly spread

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<sup>18</sup> *Id.*

<sup>19</sup> Review of Information Concerning Bighead Carp, 68 Fed. Reg. 54,409 (Sept. 17, 2003).

<sup>20</sup> 72 Fed. Reg. at 37462.

<sup>21</sup> *Amicus Curiae Brief of the Michigan Shoreline Caucus Supporting Motion. to Reopen and Renewed Motion for Preliminary Injunction*, 5, Wisconsin v. Illinois, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2010 WL 1250416, (referencing CNN, *That Will Leave a Mark*, <http://www.youtube.com/watch?v=DLFe8xfgx24&feature=related>).

throughout the Great Lakes, *its tributaries and connected waters*."<sup>22</sup> The Illinois Department of Natural Resources has also acknowledged that, "Once in Lake Michigan, this invasive species could access many new tributaries connected to the Great Lakes."<sup>23</sup>

### ***Economic Impact***

The potential economic impact of an Asian carp invasion of the Great Lakes is staggering. It could affect recreational fishing, waterfowl hunting, commercial fishing, recreational boating and tourism. The Great Lakes fishery is valued at approximately \$7 billion.

Recreational and commercial fishing in the Great Lakes accounts for \$4.6 million annually.<sup>24</sup> Popular sport-fish include whitefish, lake trout, coho salmon, brown trout, muskellunge and northern pike. These fish species are top predators; they feed on prey fish that would directly compete with Asian carp. Given the ability of Asian carp to out-compete native species, they could starve out predator species by reducing the amount of prey species in the lakes. Asian carp are too large for the popular sport fish species to predate as a substitute.<sup>25</sup>

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<sup>22</sup> 68 Fed. Reg. 54,409; Letter from Bernard Hansen, Chairman, Great Lakes Fishery Commission, to Mr. Everett Wilson, Chief, Division of Environmental Quality, U.S. Fish and Wildlife Service (Nov. 14, 2003) [http://www.glfsc.org/fishmgmt/bighead\\_glfsc.pdf](http://www.glfsc.org/fishmgmt/bighead_glfsc.pdf). (emphasis added).

<sup>23</sup> *Motion to Reopen and for a Supplemental Decree, Petition, and Brief and Appendix in Support of Motion*, 45a, Wisconsin v. Illinois, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2009 WL 6310835. See also App. 113a, *Affidavit of Tammy J. Newcomb, Ph.D.*: "In Michigan's waters of the Great Lakes and their tributaries, examples of areas conducive to survival of silver and bighead carp include Saginaw Bay, the Muskegon River, Bays de Noc, Grand Traverse Bay, and any drowned river mouth with an embayment at its confluence with the Great Lakes. Furthermore, both species of carp grow and persist in water bodies from the size of ponds to large lakes. It is to be expected, therefore, that silver and bighead carp could inhabit inland lakes and reservoirs." (citation omitted).

<sup>24</sup> *Id.* at 15a.

<sup>25</sup> *Id.*

A reduced native fish biomass would affect the diets of waterfowl, as well, which account for a \$2.6 billion per year waterfowl hunting industry in the Great Lakes region.<sup>26</sup>

The proclivity of silver carp to leap up to ten feet out of the water when disturbed by outboard boat motors also makes them a danger to recreational boaters, risking tourism, charter boating, and the jobs that depend on them to survive. In Michigan, Great Lakes tourism and boating accounts for approximately 823,000 jobs, a \$12.8 billion travel industry, \$21 million from boat charters and \$2 billion annually from recreational boating.<sup>27</sup>

### **Chicago Area Waterway System**

The most direct means of entry for Asian carp into Lake Michigan is through the Chicago Sanitary and Ship Canal (CSSC). The CSSC is a part of the Chicago Area Waterway System (CAWS), a 76.3-mile system of canals that drain storm and treated wastewater from the Chicago region and provides recreational and commercial navigation.<sup>28</sup>

An artificial navigation canal, the Illinois & Michigan (I&M) Canal, was built in 1848 connecting the Illinois, Des Plaines and Chicago Rivers following Congressional land grants to the State of Illinois made in 1822 and 1827.<sup>29</sup> In 1861, the legislature authorized increased excavation and flow through the canal. By 1872, the canal had become sluggish

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<sup>26</sup> *Id.*

<sup>27</sup> Office of the Great Lakes & Michigan Department of Environmental Quality, *MI Great Lakes Plan*, 1 (January 2009) [http://www.michigan.gov/documents/deq/MI-GLPlan\\_262388\\_7.pdf](http://www.michigan.gov/documents/deq/MI-GLPlan_262388_7.pdf).

<sup>28</sup> *Metropolitan Water Reclamation District of Greater Chicago's Response to Motion for Preliminary Injunction*, App. 3-4, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2010 WL 1248358.

<sup>29</sup> *Wisconsin v. Illinois*, 278 U.S. 367, 401-402 (1929).

and polluted due to sewage from the growing population of Chicago.<sup>30</sup> The sewage flowed directly into Lake Michigan, where Chicago drew its drinking water.<sup>31</sup> Pumps capable of pumping 1,000 cubic feet per second were installed in 1883 to dilute the sewage in the river, but by 1891 Lake Michigan's water level had fallen two feet. The Chicago Sanitary District was organized in 1889 and completed in 1890, covering an area of 185 square miles, later expanded to 438 square miles.<sup>32</sup> The District completed the 28-mile long Chicago Sanitary and Ship Canal in 1900, permanently reversing the flow of the Chicago River away from the lake, into which it had previously flowed.<sup>33</sup>

The primary purpose of the Chicago Sanitary and Ship Canal was to dilute and flush Chicago's sewage from the Chicago River toward the Mississippi River, rather than into Lake Michigan and the city's water supply.<sup>34</sup> The Supreme Court addressed this matter specifically in the original 1929 *Wisconsin v. Illinois* decision concerning the Chicago Sanitary and Ship Canal: "It is very apparent from the report of the master and from the state legislation that the Legislature of Illinois and the Sanitary District have for a long period been strongly insistent upon such a use of the waters of Lake Michigan as would

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<sup>30</sup> *Id.* at 402.

<sup>31</sup> *Metropolitan Water Reclamation District of Greater Chicago's Response to Motion for Preliminary Injunction, supra*, App. at 4.

<sup>32</sup> *Wisconsin*, 278 U.S. at 403.

<sup>33</sup> *Metropolitan Water Reclamation District of Greater Chicago's Response to Motion for Preliminary Injunction, supra*, App. at 4.

<sup>34</sup> *Missouri v. Illinois*, 180 U.S. 208, 211-214 (1906): "[I]n the construction of said channel or drain the defendant, the Sanitary District of Chicago, Illinois, with the sanction and approval of the state of Illinois, cut through the natural bridge or watershed which divides the basin of Lake Michigan from the basins of the Des Plaines and Illinois rivers and the basin of the Mississippi river...extended said artificial channel through said natural divide of the watershed, the defendants now propose and threaten to receive into said channel or drain the sewage matter and filth of the Sanitary District of Chicago."

dispose of the sewage of the district and *incidentally* furnish a navigable water route from Lake Michigan to the Mississippi basin."<sup>35</sup>

The navigational use of the canal as an artificial waterway connecting the Mississippi River and Lake Michigan, when asserted as a right by intervening defendant states Mississippi and Arkansas in *Wisconsin*, was affirmatively denied:

They really seek affirmatively to preserve the diversion from Lake Michigan in the interest of such navigation and interstate commerce, though they have made no express prayer therefor. In our view of the permit of March 3, 1925, and *in the absence of direct authority from Congress for a waterway from Lake Michigan to the Mississippi*, they show no rightful interest in the maintenance of the diversion. Their motions to dismiss the bills are overruled, and, so far as their answer may suggest affirmative relief, it is denied.<sup>36</sup>

In effect, on that issue, the Court ruled that the riparian rights of the Great Lakes states should not be impaired in the interests of an industry that had grown out of an incidental use of the sewage canal. Congress lent its official authorization to the waterway a year later, though, with the Rivers and Harbors Act of 1930.<sup>37</sup>

Currently, the Chicago Area Waterway System encompasses the Chicago Sanitary and Ship Canal, which connects the South Branch of the Chicago River to the Des Plaines River, eventually flowing into the Illinois and Mississippi Rivers. The CSSC connects to Lake Michigan via the Chicago River Controlling Works, which includes the Chicago Lock and eight sluice gates, and to the Des Plaines River via the Lockport Lock.

The North Shore Channel, completed in 1910, connects the North Branch of the Chicago River to the Wilmette Pumping Station. A lock once connected the North Shore Channel to Lake Michigan, but it was decommissioned in 1961 and replaced with sluice

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<sup>35</sup> *Wisconsin*, 278 U.S. at 419 (emphasis added).

<sup>36</sup> *Wisconsin*, 278 U.S. at 420 (emphasis added).

<sup>37</sup> Rivers and Harbors Act, 71 Cong. Ch. 847 (July 3, 1930); 46 Stat. 918, 929.

gates to control the diversion of Lake Michigan water into the Channel. The Calumet-Sag Channel, completed in 1922, connected the CSSC with the Calumet, Little Calumet, and Grand Calumet Rivers. The O'Brien Lock and Dam, built in 1960, connects the Calumet-Sag Channel to Calumet Harbor and Lake Michigan.<sup>38</sup>

The CAWS connects to Lake Michigan at five points, which are where Asian carp could potentially access the Great Lakes. They are at the Wilmette Pumping Station, the Chicago Lock and Calumet, Indiana and Burns Harbors.<sup>39</sup>

The CSSC is maintained for navigation by the United States Army Corps of Engineers (Corps). The Chicago Lock is owned by the Chicago Area Metropolitan Water Reclamation District (District), formerly named the Chicago Sanitary District, but maintained and operated by the Corps. The sluice gates are also owned by the District, but maintained and operated by the Corps for flood control pursuant to agreements with the District. The O'Brien Lock is owned and operated by the Corps, and the O'Brien sluice gates are owned and operated by the Corps pursuant to agreements with the District. The Wilmette pumping station and sluice gates are wholly owned and operated by the District.<sup>40</sup>

### **Attempts to Prevent Asian Carp Access to the Great Lakes**

The Corps has implemented a Dispersal Barrier System in the CSSC in an attempt to prevent cross-basin transfer of aquatic invasive species, such as Asian carp, between the

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<sup>38</sup> *Metropolitan Water Reclamation District of Greater Chicago's Response to Motion for Preliminary Injunction, supra*, App. at 5.

<sup>39</sup> Asian Carp Workgroup, *Draft Asian Control Strategy Framework* (February 2010) <http://asiancarp.org>.

<sup>40</sup> *Memorandum for the United States in Opposition*, 3-4, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2010 WL 1231041.

Great Lakes and Mississippi River basins. The Dispersal Barrier System contains electric barriers consisting of steel cables secured to the bottom of the canal and charged with low-voltage DC current, creating an electric field in the water. The system operates on the theory that the electric field makes fish uncomfortable, preventing them from crossing it. The first barrier, known as the Demonstration Barrier (or Barrier I), was installed north of the Lockport Dam, approximately 25 miles from Lake Michigan, in 2002. A second barrier, Barrier IIA, was completed in 2006 and activated in 2009, 1,300 feet north of the Demonstration Barrier. A third barrier, Barrier IIB, is not yet complete.<sup>41</sup> The Corps was authorized to develop the Dispersal Barrier System by the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended by the National Invasive Species Act of 1996.<sup>42</sup>

The presence of Asian carp in the CAWS is monitored primarily through Environmental DNA (eDNA) testing. eDNA is a new process developed and administered by Dr. David M. Lodge of the University of Notre Dame, by which the genetic materials left by aquatic organisms are collected and extracted from water samples to determine a species' recent presence without relying on direct observation of the organism.<sup>43</sup> An Environmental Protection Agency evaluation of the process concluded that, "the eDNA method ... is sufficiently reliable and robust in reporting a pattern of detection that should be considered actionable in a management context. We have a high degree of confidence

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<sup>41</sup> *Motion to Reopen and for a Supplemental Decree, Petition, and Brief and Appendix in Support of Motion, supra*, App. at 27a-33a.

<sup>42</sup> Aquatic Nuisance Species Program, 16 U.S.C. § 4722 (i)(3).

<sup>43</sup> Center for Aquatic Conservation, Department of Environmental Studies, University of Notre Dame, *Risk Reduction Study Fact Sheet*, [http://edna.nd.edu/Environmental\\_DNA\\_at\\_ND/News\\_files/eDNA%20fact%20sheet%202-10-10.pdf](http://edna.nd.edu/Environmental_DNA_at_ND/News_files/eDNA%20fact%20sheet%202-10-10.pdf) (last visited April 24, 2010).

in the basic... method...us[ed] for detecting Silver and Bighead carp environmental DNA.”<sup>44</sup>

As of September 17, 2009, eDNA results indicated the presence of Asian carp one mile south of the Dispersal Barrier System in the Lockport Pool of the CSSC.<sup>45</sup> Rotenone, a fish poison, was applied to a 5.6-mile stretch of the CSSC in December 2009 while Barrier IIA was inactive for scheduled maintenance. A dead bighead carp was found 500 feet above the Lockport Lock as a result of the poisoning, though biologists believe many more may have been killed.<sup>46</sup> Also in December, 2009, eDNA testing found the presence of silver carp in the Lockport Pool. January, 2010 eDNA testing indicated the presence of Asian carp on the Lake Michigan side of the Dispersal Barrier System, in the North Shore Channel near the Wilmette Pumping Station and in the Calumet-Sag Channel near the mouth of the Calumet River and Calumet Harbor, on the Lake Michigan side of the O'Brien Lock.<sup>47</sup> An April 23, 2010 eDNA update showed positive results for Asian carp in the Calumet-Sag Channel west of the O'Brien Lock.<sup>48</sup>

The presence, migration and range expansion of Asian carp into the canals of the Chicago Area Waterway System and multiple positive eDNA results on the Lake Michigan

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<sup>44</sup> U.S. Environmental Protection Agency, *Lodge Laboratory Audit Report* (Feb. 20, 2009) [http://edna.nd.edu/Environmental\\_DNA\\_at\\_ND/News\\_files/EPA%20Audit%20Report%20of%20eDNA%20process%205%20Feb%202009.pdf](http://edna.nd.edu/Environmental_DNA_at_ND/News_files/EPA%20Audit%20Report%20of%20eDNA%20process%205%20Feb%202009.pdf) (changing first-person address to third-person).

<sup>45</sup> *Risk Reduction Fact Sheet*, *supra*.

<sup>46</sup> U.S. Fish and Wildlife Service, *Asian Carp Briefing Package*, <http://www.asiancarp.org/regionalcoordination/documents/AsianCarpBriefingPackage.pdf> (last visited April 24, 2010).

<sup>47</sup> *Id. see also Renewed Motion for Preliminary Injunction*, 7a, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2010 WL 1250413.

<sup>48</sup> The University of Notre Dame, *Environmental DNA Results as of April 23, 2010*, [http://edna.nd.edu/Environmental\\_DNA\\_at\\_ND/Battle\\_Trackers\\_files/23%20April%202010%20battle%20tracker.pdf](http://edna.nd.edu/Environmental_DNA_at_ND/Battle_Trackers_files/23%20April%202010%20battle%20tracker.pdf) (last visited April 24, 2010).

side of the Dispersal Barrier System has prompted the State of Michigan and other Great Lakes states to call for a complete ecological separation of the CAWS and Lake Michigan, including the closure of the Chicago and O'Brien Locks and the sluice gates at Wilmette Pumping Station and the Chicago River Controlling Works. To accomplish this end, Michigan motioned the Supreme Court to reopen the 1929 *Wisconsin v. Illinois* case that challenged Illinois' and the Chicago Sanitary District's diversion of water through the locks and sluice gates into the CAWS.<sup>49</sup>



Figure 2: Chicago Area Waterway System with eDNA Detections as of February 22, 2010<sup>50</sup>

<sup>49</sup> *Wisconsin*, 278 U.S. at 367.

<sup>50</sup> Stopasiancarp.com, www.stopasiancarp.com (last visited May 5, 2010).

## II. Law

### *Missouri v. Illinois*

The first legal challenge to the operation of the Chicago Sanitary and Ship Canal was *Missouri v. Illinois*.<sup>51</sup> In that case, the State of Missouri alleged that the canal created a public nuisance by transporting Chicago's sewage into the Des Plaines, Illinois and Mississippi Rivers. The Court held that Illinois was a proper defendant in that the Chicago Sanitary District was created by and acted as an agency of the State of Illinois, but denied Missouri's requested injunction on the facts of the case.<sup>52</sup> In the Court's opinion, Justice Holmes wrote on the issue of exercising the Court's original jurisdiction: "Before this court ought to intervene, the case should be of serious magnitude, clearly and fully proved, and the principle to be applied should be one which the court is prepared deliberately to maintain against all considerations on the other side."<sup>53</sup>

### *Wisconsin v. Illinois*

The next major legal challenge to the Chicago Sanitary and Ship Canal was *Wisconsin v. Illinois*. This suit was brought by the states of Wisconsin, Minnesota, Ohio, Michigan, New York and Pennsylvania to enjoin the Chicago Sanitary District and Illinois from diverting water from Lake Michigan into the canal. By reversing the flow of the Chicago River and pumping water out of the lake, the District had lowered the water level of the Great Lakes by up to six inches. The Supreme Court declared the diversion to be

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<sup>51</sup> *Missouri*, 180 U.S. at 208; *Missouri v. Illinois*, 280 U.S. 496 (1906).

<sup>52</sup> *Missouri*, 280 U.S. 496.

<sup>53</sup> *Id.* at 521 (referencing *Kansas v. Colorado*, 185 U.S. 125 (1902)).

unlawful in that it impaired the other states' water, navigation and riparian rights in the Great Lakes and was not authorized by Congress, and, after referring the matter to a special master, crafted a decree that gradually lowered the amount of water the District was allowed to divert. The Court also ordered the District to build sewage treatment facilities to negate their reliance on lake water to treat the city's sewage. The case was reopened on several occasions for enforcement proceedings, in which Illinois was ordered to provide the funds and means necessary to allow the District to build the wastewater treatment facility, for alterations to the decree reflecting the amount of water to be diverted and the methods for calculating the amount of water to be diverted. The United States intervened on behalf of the Corps of Engineers when the case was last reopened, in 1980. The Supreme Court expressly retained jurisdiction in this original action through a re-opener provision, stating, "Any of the parties hereto may apply at the foot of this decree for any other or further action or relief, and this Court retains jurisdiction ... for the purpose of making any order or direction, or modification of this decree, or any supplemental decree, which it may deem at any time to be proper in relation to the subject matter in controversy."<sup>54</sup>

It is this re-opener provision that Michigan, through Attorney General Mike Cox, sought to use to force the Metropolitan Water Reclamation District (formerly the Chicago Sanitary District) and the Army Corps of Engineers to close the locks and sluice gates connecting the Chicago Area Waterway System (CAWS) to Lake Michigan, under the theory that the facilities used to maintain the water diversion now create a public nuisance in that they allow invasive aquatic species like Asian carp to pass through them into the Great Lakes. Michigan's petition asked for a supplemental decree for a permanent and a

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<sup>54</sup>Wisconsin v. Illinois, 388 U.S. 426, 430 (1967); Wisconsin v. Illinois, 449 U.S. 48 (1980); *Motion to Reopen and for a Supplemental Decree, Petition, and Brief and Appendix in Support of Motion, supra.*

preliminary injunction to abate the nuisance, specifically closing the locks and creating complete ecological separation of the Great Lakes and the CAWS.<sup>55</sup>

### **Retained Jurisdiction**

In order for the Court to reopen *Wisconsin v. Illinois* under its express retained jurisdiction, Michigan had to show that the harm it alleged was part of "the subject matter in controversy."<sup>56</sup> Michigan argued that the subject matter of *Wisconsin v. Illinois* was the diversion project and its associated infrastructure, including its locks, sluice gates and canals.<sup>57</sup> It was important, for Michigan, that the subject matter was construed broadly, because it is the facilities that are alleged to create the public nuisance by which Asian carp can enter Lake Michigan. This position was supported in amicus curiae filed by Indiana, New York, Ohio and the Michigan Shoreline Caucus.<sup>58</sup> The Michigan Shoreline Caucus

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<sup>55</sup> *Motion to Reopen and for a Supplemental Decree, Petition, and Brief and Appendix in Support of Motion, supra* at 1.

<sup>56</sup> *Id.*

<sup>57</sup> *Id.* at 2. "[T]he facilities for diversion of water from Lake Michigan that are the subject of the existing Decree.... The matter in controversy originated more than 100 years ago with the Defendants' construction and operation of an artificial canal, now referred to as the Chicago Sanitary and Ship Canal."

<sup>58</sup> *Brief of the State of Indiana as Amicus Curiae in Support of the Motion to Reopen and for a Supplemental Decree*, 7-8, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2010 WL 1250418. "[T]he broader issue has always been about the conditions under which Illinois may divert water from Lake Michigan into the artificial waterway system that Illinois created for local sanitation purposes. That issue was the basis of the 1929 case ... and is now the basis for the nuisance claim brought by Michigan here." (citation omitted); *Response of State of New York to Motion for Preliminary Injunction*, 1, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2009 WL 6313204. "[B]ecause the new harm stems from the same source as the harm in the original cases...."; *Memorandum of the State of Ohio*, 1, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2009 WL 6312593. "This Court has jurisdiction to consider Michigan's request, which relates directly to the subject matter of the Court's 1967 consent decree—the defendants' creation and operation of a series of artificial waterways connecting Lake Michigan and the Des Plaines and Illinois Rivers, and their diversion of water from the Great Lakes into these waterways."; *Amicus Curiae Brief of the Michigan Shoreline Caucus Supporting Motion to Reopen and Renewed Motion for Preliminary Injunction, supra* at 19. "The subject matter in controversy in Original Actions Nos. 1, 2, and 3 was the construction of the Chicago Sanitary and Ship Canal and how the Canal's diversion of waters from Lake Michigan affected public rights in the Great Lakes."

also argued that, whether or not the specific subject matter was water diversion or the full diversion project including its facilities, the phrase "in relation to," in the re-opener provision is sufficiently broad to encompass the nuisance alleged in Michigan's complaint.<sup>59</sup>

In opposition, Illinois argued that the subject matter was limited to the diversion of water from Lake Michigan, and that since Michigan made no request to alter the amount of water Illinois is permitted to withdraw (the reason for the 1967 and 1980 reopenings), Michigan's current claim was not sufficiently "in relation to the subject matter in controversy," to warrant reopening the case once more. Specifically, the Court could not have reasonably anticipated the prevention of invasive aquatic species as a reason to reopen a water diversion case when they inserted the opener provision.<sup>60</sup>

Michigan countered that the invasion of Asian carp into the Chicago Area Waterway System represented a new issue not previously litigated, a requirement to reopening original jurisdiction cases, in the interest of finality.<sup>61</sup> These two principles are seemingly at odds, but can be resolved when considering that the new issue not previously litigated must still be in relation to the subject matter in controversy, such as a new, unforeseen factual issue that affects the amount of water that may be diverted.<sup>62</sup>

The text of the original 1929 opinion stated:

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<sup>59</sup> *Amicus Curiae Brief of the Michigan Shoreline Caucus Supporting Motion to Reopen and Renewed Motion for Preliminary Injunction, supra* at 18-19. "As this Court has repeatedly recognized, 'the phrase 'in relation to' is expansive.'" (citing *Travelers Indem. Co. v. Bailey*, 129 S. Ct. 2195, 2203 (2009), et al.).

<sup>60</sup> *Brief in Opposition*, 14, *Wisconsin v. Illinois*, Nos. 1, 2 & 3, Orig., (U.S., Mot. to Reopen denied Apr. 26, 2010) 2010 WL 1362236. "The Court will 'scrutinize[ ] closely' a request to reopen an existing case, to ensure that reopening will not 'take the litigation beyond what [the Court] reasonably anticipated when [it] granted leave to file the initial pleadings.'" (quoting *Nebraska v. Wyoming*, 515 U.S. 1, 8 (1995)).

<sup>61</sup> *Arizona v. California*, 460 U.S. 605, 619 (1983).

<sup>62</sup> *Brief in Opposition, supra* at 17.

The exact issue is whether the state of Illinois and the Sanitary District of Chicago by diverting 8,500 cubic feet [per second] from the waters of Lake Michigan have so injured the riparian and other rights of the complainant states bordering the Great Lakes and connecting streams by lowering their levels as to justify an injunction to stop this diversion and thus restore the normal levels.<sup>63</sup>

While they have not issued an opinion on the matter, the Supreme Court denied Michigan's Motion to Reopen *Wisconsin v. Illinois* on April 26, 2010. Since they had expressly retained jurisdiction in that case, it can be inferred that they decided that the threat of Asian carp swimming through the facilities used to maintain the diversion was not sufficiently "in relation to" the actual diversion of water and its effect on riparian and other rights in the Great Lakes.<sup>64</sup> The Court had previously denied Michigan's motion for preliminary injunction and its renewed motion for preliminary injunction, filed after the January eDNA findings were released.<sup>65</sup>

### **Original Jurisdiction**

In its motion to reopen *Wisconsin v. Illinois*, Michigan alternatively motioned for leave to file a new, original cause of action for public nuisance against Illinois, the District and the United States due to its agency, the Army Corps of Engineers.<sup>66</sup>

Michigan claimed the Supreme Court had original jurisdiction to hear the matter under Article III of the Constitution. It states, "[I]n all cases ... in which a State shall be

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<sup>63</sup> *Wisconsin*, 278 U.S. at 409, 410.

<sup>64</sup> Order List, 559 U.S. (Monday, April 26, 2010)  
<http://www.supremecourt.gov/orders/courtorders/042610zor.pdf>.

<sup>65</sup> Order List, 558 U.S. (Tuesday, January 19, 2010)  
<http://www.supremecourt.gov/orders/courtorders/011910zor.pdf>.; Order List, 559 U.S. (Monday, March 22, 2010) <http://www.supremecourt.gov/orders/courtorders/032210zor.pdf>.

<sup>66</sup> *Motion to Reopen and for a Supplemental Decree, Petition, and Brief and Appendix in Support of Motion*, *supra* at 31.

Party, the supreme Court shall have original jurisdiction."<sup>67</sup> The Supreme Court has original and *exclusive* jurisdiction in actions between two or more states, and has original but not exclusive jurisdiction in actions between the United States and a state or between a state and citizens of another state.<sup>68</sup> The Court looks at two primary factors when considering whether to exercise original jurisdiction. First, the controversy must be of sufficient weight and dignity to warrant the Court's exercise of its jurisdiction, and, second, there must not be any suitable alternative forum.<sup>69</sup>

Taken together, this means that if Illinois is properly joined as a party, then there are no suitable alternative forums because the Court has exclusive jurisdiction over controversies between two or more states. If the controversy is of sufficient weight and dignity (discussed below), then the Supreme Court should exercise its exclusive and original jurisdiction, granting leave to Michigan to bring a cause of action against Illinois, *et al.* Conversely, if Illinois is not a proper party, then the Court's jurisdiction is not exclusive, thereby meaning that there may be another suitable alternative forum, such as a state or Federal District court.

The Supreme Court had twice addressed the issue of Illinois as a properly joined defendant as a result of the Metropolitan Water Reclamation District's actions with respect to the Chicago Sanitary and Ship Canal. In *Missouri v. Illinois*, the Court said:

The Sanitary District is ... a public corporation whose existence and operations are wholly within the control of the state. [ ] The object of the bill is to subject this public work to judicial supervision, upon the allegation that the method of its construction and maintenance will create a continuing nuisance dangerous to the health of a neighboring state and its inhabitants. Surely, in such a case, the state

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<sup>67</sup>U.S. Const., art. III, § 2, cl. 2.

<sup>68</sup> 28 U.S.C.A. §1251 (a), (b)(2), (b)(3).

<sup>69</sup> *Mississippi v. Louisiana*, 506 U.S. 73, 77 (1992).

of Illinois would have a right to appear and traverse the allegations of the bill, and, having such a right, might properly be made a party defendant.<sup>70</sup>

Substitute "riparian rights" for "health of a neighboring state and its inhabitants," and the passage could apply directly to the facts alleged by Michigan: the method of maintenance will create a continuing nuisance dangerous to the ecosystem, fishery and riparian rights of multiple neighboring Great Lakes states.

Additionally, in *Wisconsin v. Illinois*, the Court again held that Illinois was a proper defendant, responsible for the actions of the Sanitary District:

In this controversy between States, the State of Illinois by virtue of its status and authority as a State is the primary and responsible defendant. While the Sanitary District is the immediate instrumentality of the wrong ... that instrumentality was created and has continuously been maintained by the State of Illinois. Every act of the Sanitary District in establishing and continuing the diversion has derived its authority and sanction from the action of the State, and is directly chargeable to the State. The adjudication as to the right of the complainant States to have the diversion reduced as provided in the decree is an adjudication not merely as against the Sanitary District but as against the State as the defendant responsible under the Federal Constitution to its sister States for the acts which its creature and agent, the Sanitary District, has committed under the State's direction.<sup>71</sup>

In the instant case, Illinois again asserted that it was not a proper defendant, since the locks that Michigan wishes to close are operated by the United States Army Corps of Engineers and the sluice gates are operated by the District.<sup>72</sup> Additionally, it claims that since Michigan seeks no specific relief from Illinois, it cannot be joined as a defendant.<sup>73</sup> This argument is in line with the recent *South Carolina v. North Carolina* ruling. South Carolina brought action against the City of Charlotte and North Carolina to apportion water rights in the Catawba River. The Court did not allow the City of Charlotte to be joined as a

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<sup>70</sup> *Missouri*, 180 U.S. at 242.

<sup>71</sup> *Wisconsin*, 289 U.S. at 399-400.

<sup>72</sup> *Brief in Opposition*, *supra* at 23.

<sup>73</sup> *Id.*

defendant, though, because no specific relief was requested from Charlotte, and its interests would be duplicated by North Carolina in the case.<sup>74</sup> Switching the roles of municipality and state in the instant case, the rights of Illinois in the waterway would be represented by the District, and, similarly, Michigan has not requested specific relief from Illinois. This may have been the reasoning of the Court, because in the same order denying Michigan's Motion to Reopen *Wisconsin v. Illinois*, the Court stated, "The alternative motion for leave to file a bill of complaint is denied."<sup>75</sup>

Once again, without an opinion on the order, the exact reasoning for the denial of the motion is left to conjecture. However, given the two factors expressed in *Mississippi v. Louisiana*, it must be that Michigan's claim failed to be either of sufficient seriousness and dignity to warrant the Court's time, or they must have some other suitable alternate forum and that Illinois is not a necessary party, contradicting the Court's earlier rulings on the issue.<sup>76</sup>

The "seriousness and dignity" requirement, as previously discussed, comes from *Mississippi v. Louisiana*. The Court noted that "The model case for invocation of this Court's original jurisdiction is a dispute between States of such seriousness that it would amount to *casus belli* if the States were fully sovereign."<sup>77</sup> In its amicus curiae brief, the Michigan Shoreline Caucus raised that point; that the threat of invasive species in the Great Lakes is indeed a *casus belli*, as international treaties on the issue already exist between the United States and Canada:

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<sup>74</sup> *South Carolina v. North Carolina*, 130 S.Ct. 854, 858 (2010).

<sup>75</sup> Order List, 559 U.S. (Monday, April 26, 2010).

<sup>76</sup> *Mississippi*, 506 U.S. at 77.

<sup>77</sup> *Id.* (quoting *Texas v. New Mexico*, 462 U.S. 554, 571 (1983)).

This is just such a case, as evidenced by the fact that international treaties specifically address the issue of invasive species. For example, the United Nations Convention on the Law of the Sea states that "States shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from . . . the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto."<sup>78</sup>

Given the seriousness of the threat that Asian carp pose to the Great Lakes' \$7 billion fishery *and* the existence of international treaties that specifically address the issue of invasive species prevention, it is likely that the Supreme Court denied Michigan's motion for leave to file an original bill of complaint because it felt that the underlying issues could be resolved in a suitable alternative forum.<sup>79</sup>

### **Alternative Forum**

With the door closed on an original cause of action in the Supreme Court, the U.S. District Court becomes the most suitable alternative forum for Michigan to pursue its requested relief against the remaining defendants, the United States by virtue of its agency, the Army Corps of Engineers, and the Metropolitan Water Reclamation District. Michigan cannot bring claims against Illinois in U.S. District or any other court, because the Supreme Court's jurisdiction over claims between the states is exclusive.<sup>80</sup>

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<sup>78</sup> *Amicus Curiae Brief of Michigan Shoreline Caucus Supporting Motion to Reopen and Renewed Motion for Preliminary Injunction, supra* at 13 (*quoting* United Nations Convention on the Law of the Sea, art. 196(1), Dec. 10, 1982, 1833 U.N.T.S. 397).

<sup>79</sup> *Mississippi*, 506 U.S. at 77. "[W]e are persuaded that the pending state-court action provides an appropriate forum in which the *issues* tendered here may be litigated." (*quoting* *Arizona v. New Mexico*, 425 U.S. 794 at 797 (1976). (emphasis in original)).

<sup>80</sup> *Id.* at 77. "But Mississippi's argument for jurisdiction in the District Court here founders on the uncompromising language of 28 U.S.C. § 1251(a), which gives to this Court 'original and *exclusive* jurisdiction of all controversies between two or more States.' Though phrased in terms of a grant of jurisdiction to this Court, the description of our jurisdiction as 'exclusive' necessarily denies jurisdiction of such cases to any other federal court. This follows from the plain meaning of 'exclusive' [debar from possession], and has been remarked upon by opinions in our original jurisdiction cases." (citations omitted).

A Federal District Court is the appropriate forum because it is the only forum where Michigan can seek relief from both the United States and the District. If the District is not an arm of the state (if it was, then the Supreme Court should have granted Michigan's alternative motion for leave to file an original cause of action), then it does not enjoy the state's Eleventh Amendment sovereign immunity and its claims may be adjudicated in the District Court.<sup>81</sup>

Moreover, a U.S. District Court would have jurisdiction to adjudicate a claim against the Army Corps of Engineers under the Administrative Procedures Act (APA).<sup>82</sup> Under the language of the APA, Michigan must amend its complaint to allege that the Assistant Secretary of the Army has failed to act in an official capacity to prevent the nuisance by closing the locks. The United States, in its reply brief, asserts that even under the APA, Michigan's claim is premature because there has been no final agency action to review.<sup>83</sup> However, Section 706 allows for the review of "agency action unlawfully withheld or unreasonably delayed."<sup>84</sup> Whether or not the Assistant Secretary of the Army Corps of Engineers makes a final determination to close or keep open the locks, the

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<sup>81</sup> *Hess v. Port Authority Trans-Hudson Corporation*, 513 U.S. 30, 47 (1994).

<sup>82</sup> Administrative Procedures Act, 5 U.S.C. § 702. The APA states: "A person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof. An action in a court of the United States seeking relief other than money damages and stating a claim that an agency or an officer or employee thereof acted or failed to act in an official capacity or under color of legal authority shall not be dismissed nor relief therein be denied on the ground that it is against the United States or that the United States is an indispensable party. The United States may be named as a defendant in any such action, and a judgment or decree may be entered against the United States: Provided, That any mandatory or injunctive decree shall specify the Federal officer or officers (by name or by title), and their successors in office, personally responsible for compliance."

<sup>83</sup> *Memorandum for the United States in Opposition*, *supra* at 30.

<sup>84</sup> Administrative Procedures Act, 5 U.S.C. § 706 (1).

unreasonable delay to do so, if unsupported by the substantial evidence or unwarranted by the facts, will allow for a judicial review of that delay under the APA.<sup>85</sup>

### **Public Nuisance**

If Michigan proceeds against the United States and the Metropolitan Water Reclamation District in U.S. District Court, it will most likely allege, as it did in its original motion, that the locks and sluice gates create a common law public nuisance in that they allow the injurious Asian carp to advance into Lake Michigan.

A public nuisance is defined as an unreasonable interference with a right common to the public.<sup>86</sup> The unreasonable interference can be a condition, action or *failure to act*.<sup>87</sup>

The first consideration is whether there is an affected right common to the public.<sup>88</sup> "The interference with a public right is the *sine qua non* of a cause of action for public nuisance."<sup>89</sup> Public rights in the Great Lakes include boating, swimming, fishing, hunting, recreation and to preserve scenic beauty.<sup>90</sup> Additionally, aquatic resources, such as fish native to the Great Lakes, are held in trust by the Great Lakes states for their citizens.<sup>91</sup>

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<sup>85</sup> 5 U.S.C. § 706 (2)(E),(F).

<sup>86</sup> Restatement 2d Torts § 821B.

<sup>87</sup> City of Chicago v. Beretta U.S.A. Corp., 821 N.E.2d 1099, 1113-1114 (Ill. 2004) (emphasis added).

<sup>88</sup> *Id.* at 1114.

<sup>89</sup> *Id.* at 1115 (*quoting* 58 Am.Jur.2d Nuisances § 39 (2002)).

<sup>90</sup> Glass v. Goeckel, 473 Mich. 663 (Mich. 2005); Muench v. Public Service Comm., 261 Wis. 492, 53 NW.2d 514 (Wis. 1952).

<sup>91</sup> Illinois Central R.R. Co. v. Illinois, 146 U.S. 387 (1892).

Sport-fishing, charter and recreational boating, waterfowl hunting, scenic beauty and aquatic resources are precisely what are at risk if Asian carp are allowed to enter Lake Michigan:

Due to the large size, fast growth rate, high food consumption rate and high reproductive potential of silver carp, competition for food and habitat with native planktivorous fishes and with post-larvae and early juveniles of most native fishes is likely high...It is highly likely silver carp would adversely affect fishes in the Great Lakes basin or other watersheds if they establish.<sup>92</sup>

Under the previous cases delineating the rights of citizens in the Great Lakes listed above, it is clear that the alleged nuisance would affect well-established rights common to the public. The fact that Asian carp have not yet established a breeding population in the Great Lakes would not diminish the public nuisance claim. A nuisance does not have to be fully realized to be abated. A nuisance may include "[T]he *possibility* of an annoyance to the public by invasion of its rights."<sup>93</sup> In *Swetland v. Curtiss Airports Corp.*, the Sixth Circuit Court of Appeals amended a decree to abate a threatened nuisance when an airport was built near a residential district, even though the threatened nuisance had not yet been realized: "The air field was not fully developed at the time of the trial, but as partially developed it had been operated for a sufficient length of time to show its effect, when completed as planned, upon the plaintiff's property."<sup>94</sup> They abated the nuisance as proposed, saying it "*will* result in injuries that cannot be measured in damages."<sup>95</sup>

Likewise, the threatened nuisance that the locks present by allowing Asian carp into the Great Lakes, though not yet fully realized, "*will* result in injuries that cannot be

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<sup>92</sup> 72 Fed. Reg. at 37,462.

<sup>93</sup> Am.Jur. Nuisances § 41 (2010) (emphasis added).

<sup>94</sup> *Swetland v. Curtiss Airports Corp.*, 55 F.2d 201, 203 (6th Cir. 1932).

<sup>95</sup> *Id.* at 204 (emphasis added).

measured in damages." While Asian carp are not yet in the Great Lakes, their expansion in the Mississippi and Illinois Rivers has occurred "for a sufficient length of time to show its effect," if they are allowed entry into Lake Michigan. The ultimate determination of whether the locks, by allowing Asian carp to pass through them, present a public nuisance will be left to the "trier of fact."<sup>96</sup> This will hinge on the scientific evidence presented to the court regarding the likelihood of Asian carp taking over the Great Lakes in the same manner that they took over the Mississippi River, discussed in Section I, above.

The next determination is whether there is an interference with the public right, and if that interference is unreasonable. Factors that help to determine whether the interference is unreasonable include whether the conduct produces a permanent or long-lasting effect, and that the actor has reason to know that it has a significant effect upon the public right.<sup>97</sup> An entity can be liable for the abatement of a continuing nuisance, even if it was not created by the entity.<sup>98</sup>

Certainly, both the Army Corps of Engineers and the Metropolitan Water Reclamation District have reason to know that the introduction of Asian carp into the Great Lakes could affect the public rights previously mentioned. The record on that, discussed above, has been well-documented in the press and through the pleadings in the attempt to reopen *Wisconsin v. Illinois*. And, even though neither of those two entities introduced Asian carp into the Chicago Area Waterway System, under the continuing nuisance theory they may be held liable for abating the nuisance. This theory is expressed more clearly in *State of N.Y. v. Shore Realty Corp.* Though expressing New York law, the continuing

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<sup>96</sup> Am.Jur. Nuisances § 21.

<sup>97</sup> Rest. 2d Torts § 821B (c).

<sup>98</sup> *Brunfield v. Mineola Hotel and Restaurant, Inc.*, 456 N.E.2d 361, 367 (Ill. App. Ct. 1983).

nuisance theory is the same as stated in *Brunsfild v. Mineola Hotel and Restaurant, Inc.* under Illinois law. *Shore* stated:

Liability of a possessor of land is not based upon responsibility for the creation of the harmful condition, but upon the fact that he has exclusive control over the land and ... should have the responsibility of taking reasonable measures to remedy conditions on it that are a source of harm to others. Nor is there any requirement that the State prove actual, as opposed to threatened, harm from the nuisance in order to obtain abatement.<sup>99</sup>

Thus, because the Corps and the District have exclusive control over the locks and sluice gates, they should have the responsibility to abate the threat of nuisance they represent by allowing Asian carp to pass through them, interfering with the rights that the citizens of the complaining states enjoy in the Great Lakes.

### **III. Solutions**

Potential solutions to prevent Asian carp from entering Lake Michigan include court remedies, negotiated remedies, and the status quo, which is the prevention plan adopted by the Asian Carp Workgroup.

#### **Injunction**

If Michigan can show that the continued operation of the locks and sluice gates connecting the CAWS to Lake Michigan present a public nuisance to the rights of the citizens of the Great Lakes states, then they may be awarded an injunction ordering their closure to abate the nuisance. Under Illinois law, the complaining party must show three

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<sup>99</sup> State of N.Y. v. Shore Realty Corp., 759 F.2d 1032, 1051 (N.Y. 1985) (omitting citations).

things to be awarded an injunction. The party must establish a lawful right, irreparable harm to that right, and an inadequate remedy at law.<sup>100</sup>

The existence of lawful rights that may be impacted by an infestation of Asian carp has been earlier established. An irreparable harm means one that is continuous in nature, not necessarily one for which monetary compensation is inadequate.<sup>101</sup> A single occurrence may also be a continuing nuisance "where a single act produces a continuing result."<sup>102</sup> Based on the scientific testimony, an Asian carp invasion would be continuous in nature in that they would establish a self-perpetuating breeding population due to their rapid reproduction rates, even if their access through the locks was later cut off.<sup>103</sup>

The absence of an adequate remedy at law is less certain. "The standard for the adequacy of the legal remedy is whether it is *clear, complete, and as practical and efficient as the equitable remedy.*"<sup>104</sup>

This standard requires measuring the proposed equitable remedy, closure of the locks and a complete ecological separation of the Great Lakes and CAWS, against the remedy at law, which is the Asian Carp Workgroup Control Strategy, based on the four factors of clarity, completeness, practicality and efficiency.

The first factor, when comparing the proposed equitable alternative with that at law, is clarity. Michigan's request to abate the nuisance is described in its Motion for

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<sup>100</sup> *Tamalunis v City of Georgetown*, 542 N.E.2d 402, 413 (Ill. App. Ct. 1989) (omitting citation).

<sup>101</sup> *Id.*

<sup>102</sup> *Am.Jur. Nuisances* § 74; *see also Green v. Blanton*, 362 S.E.2d 179, 181 (S.C. Ct. App. 1987).

<sup>103</sup> 18 U.S.C. § 42; 72 Fed. Reg. 37,459.

<sup>104</sup> *Tamalunis* at 413 (omitting citation) (emphasis added).

Preliminary Injunction, which was filed concurrently with its motion to reopen *Wisconsin v. Illinois*. In its request for a supplemental decree, it asks for:

Enjoining the Defendants and the Intervenor to take all necessary measures within their control to prevent and abate that nuisance, including both interim measures to minimize the risk that those species will be introduced to the Lake, as well as the development and implementation of plans to permanently and reliably separate the carp-infested waters of the Illinois River basin from Lake Michigan.<sup>105</sup>

Michigan lists three steps in its request that indicate the interim equitable relief it may seek in a U.S. District Court in Illinois.

(1) close and cease operating the two navigational locks at the O'Brien Lock and Dam and Chicago Controlling Works; (2) to operate the water control sluice gates at O'Brien and Chicago and the Wilmette Pumping Station in a manner that will not allow the carp to pass through them; and (3) take all other actions necessary to prevent the carp from entering Lake Michigan, including addressing the potential Des Plaines River and Grand and Little Calumet pathways.<sup>106</sup>

From the standpoint of clarity, Michigan identifies only one concrete interim action, closing the O'Brien Lock and Dam and the lock at the Chicago Controlling Works, and one long-term action, the ecological separation of the Chicago Area Waterway System from Lake Michigan. Michigan requests that defendants be enjoined to operate the sluice gates "in a manner that will not allow the carp to pass through them," but it is not clear as to what that manner is. Likewise, they request that "all other actions necessary" are taken, but are not clear about what specific actions should be taken.<sup>107</sup>

The Asian Carp Workgroup Control Strategy presents its proposed steps with more clarity; they include using rotenone, a fish poison, along with other chemical applications, electro-fishing and netting to target areas where eDNA testing suggests the presence of

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<sup>105</sup> *Motion for Preliminary Injunction, supra* at 23.

<sup>106</sup> *Motion for Preliminary Injunction, supra* at 5.

<sup>107</sup> *Id.*

Asian carp. It also recommends the expedited completion of Barrier IIB as part of the Dispersal Barrier System, and multiple methods of additional study and monitoring of Asian carp prevention methods. The primary purpose of the Strategy is:

To transition from a single point defense to a multi-tiered approach. The electric barriers remain the most important defense mechanism against Asian carp expansion. However, success in defeating Asian carp depends on the ability to transition from this single technology, located at one geographic point, to a multi-tiered defense encompassing all aspects of monitoring, surveillance, structural solutions, biological controls, and eradication response options.<sup>108</sup>

The Strategy addresses the possibility of lock closure, and acknowledges that they may be temporarily closed in an emergency to prevent Asian Carp migration.<sup>109</sup> They do not commit to the possibility of closing the locks, though, even temporarily for a few weeks, absent further studies on its potential effect on flood control and sewage. They address studying the possibility of "modified structural operations," such as limiting when the locks may be opened and applying aggressive carp removal techniques, such as rotenone application, netting and electro-fishing during the periods when the locks are closed or the installation of underwater barriers.<sup>110</sup>

The clearest difference between the two plans is that Michigan's requested equitable relief would close the locks while alternatives are studied, and the Workgroup's strategy operates under the premise that the locks are to remain open to navigation while alternatives are studied.

The practicality of implementing the separate plans is also a consideration. Many of the Workgroup's proposed actions would be carried out whether or not the locks are closed. The estimated cost for implementing the full strategy, according to funding estimates in the

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<sup>108</sup> *Draft Asian Control Strategy Framework, supra* at 2.

<sup>109</sup> *Id.* at 7.

<sup>110</sup> *Id.* at 6-9.

plan, is over \$74 million from federal and private sources.<sup>111</sup> The economic effect of closing the locks has been estimated to be between \$70 million and \$235 million annually, based on two different studies.<sup>112</sup> These figures are based on the amount of money that the shipping industry could lose due to the loss of navigation through the CAWS. Comparatively, the Great Lakes states could lose up to \$7 billion annually through the loss of their sport-fishery and related industries.

Completeness and efficiency are inextricably entwined when comparing the two proposals. How completely will they abate the nuisance; how efficiently will they be able to accomplish their purpose? Will they work? The essential factor to answering those questions continues to be: Is lock closure necessary to prevent Asian carp from accessing Lake Michigan?

The eDNA evidence suggests that Asian carp have moved past the Dispersal Barrier System, which means that the locks are the only thing between the fish and the lake. eDNA testing is the method that the Army Corps of Engineers contracted for monitoring the advance of Asian carp through the CAWS and, though it is a new process for detection, the EPA has stated that it is accurate enough to be the basis of management decisions.<sup>113</sup> However, no actual Asian carp have been found in the canal past the Dispersal Barrier System.<sup>114</sup> Whether or not lock closure is absolutely necessary to prevent Asian carp from establishing a population in the Great Lakes likely cannot be known with certainty at this

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<sup>111</sup> *Id.* (totaling funding estimates for each proposed action).

<sup>112</sup> John Flesher, *Study: Closing Chicago locks would cost billions*, Associated Press (April 7, 2010) <http://www.google.com/hostednews/ap/article/ALeqM5gSJLuHoTDaOTmQfBV11Vqj0aMxpAD9EUIDJ0>.

<sup>113</sup> *Lodge Laboratory Audit Report, supra.*

<sup>114</sup> John Flesher, *6-week search finds no Asian carp in Chicago waters*, Associated Press (March 29, 2010) <http://www.theoaklandpress.com/articles/2010/03/29/news/doc4bb10867a59bf055820408.txt>.

time. In the absence of a clear determination on the completeness and efficacy of the remedy available at law, how much of a chance are the parties willing to take that their respective strategies are correct? Are there alternatives to litigation that can resolve the matter?

### **CARP ACT**

One alternative to litigation is the CARP ACT (Close All Routes and Prevent Asian Carp Today), which was introduced into both the House of Representatives and the United States Senate on January 21 and 22, 2010.<sup>115</sup> The House bill, introduced by Rep. Dave Camp (R-Mich.) has seven co-sponsors and was referred to the Committee on Transportation and Infrastructure. The Senate bill was introduced by Sen. Debbie Stabenow (D-Mich.), has five co-sponsors and was referred to the U.S. Senate Committee on Environment and Public Works. The CARP ACT would enact by law what Michigan, through Attorney General Mike Cox, has sought through the Court. It would force closure of the locks until a controlling works strategy is implemented, and place barriers in the Grand and Little Calumet Rivers, a measure not addressed by the Asian Carp Workgroup Control Strategy.<sup>116</sup> However, even if the CARP ACT was passed by Congress, it would still need to be signed into law by President Obama, which seems unlikely since his administration has opposed closure of the locks.<sup>117</sup>

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<sup>115</sup> CARP ACT, S. 2946; H.R. 4472, 111th Cong. (2010).

<sup>116</sup> S. 2946; H.R. 4472.

<sup>117</sup> John Flesher, *Supreme Court stays out of Asian carp dispute*, Associated Press (April 26, 2010) <http://www.google.com/hostednews/ap/article/ALeqM5hig2vB8kklwHw77cveBJnuGv-W4QD9FB0N204>. "We are pleased that the court has agreed with our position," said Lisa Madigan, attorney general of Illinois, which joined the *Obama administration in opposing Michigan*." (emphasis added).

## Alternative Dispute Resolution

A litigated resolution could take years, if pursued, and the CARP ACT would likely be vetoed, even if passed.<sup>118</sup> What, then, is left? Michigan and the other Great Lakes states could consider a negotiated economic resolution with the Corps, the District and the American Waterway Operators, the trade association that represents the barge, tugboat and shipping industries that would be affected by lock closure. Simply put, if the fisheries are worth \$7 billion dollars to the Great Lakes states, how much would they be willing to pool to compensate the shipping industry for a negotiated closure of the locks?

There are many potential hurdles to a negotiated resolution. The wide disparity in the value of the estimated loss that the shipping industry could incur would certainly affect the parties' starting points. Also, the economic situation has strapped state budgets. For example, Michigan had a budget deficit of \$3.8 billion in fiscal year 2009.<sup>119</sup> Politics may play a pivotal role in whether or not a settlement is reached; for instance, Attorney General Cox is expected to run for Governor of Michigan, and a payout to the shipping industry may not be a politically popular move considering the state's budget deficit. Similarly, even with a financial compensation, the American Waterway Operators may be reluctant to accept a settlement that could eliminate jobs in the shipping industry. Finally, an omnipresent barrier to any negotiation could be the parties' reliance on their positions (the locks must close / must remain open), rather than on their underlying interests (keeping Asian carp out of Lake Michigan / avoiding financial loss to the shipping industry). Their

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<sup>118</sup> *Id.* "Another federal suit could take years, and a district judge probably would be reluctant to close the locks in the meantime after the Supreme Court twice refused to do so, said Nick Schroeck, executive director of the Great Lakes Environmental Law Center in Detroit."

<sup>119</sup> State of Michigan, *FY2009 Comprehensive Annual Financial Report*, 8. (Feb. 27, 2010) available at [www.michigan.gov/budget](http://www.michigan.gov/budget).

positions are fundamentally opposed to each other and could not be settled, but a negotiated settlement could be crafted to achieve both of their underlying interests.

There should be a mutually beneficial point where the Great Lakes states could compensate the shipping industry, perhaps by a pool funded by charter and fishing licenses as well as other state, federal, and environmental non-profit sources, that shipping companies could draw from to offset losses attributed to the closure of the locks. This could be a real possibility if the Great Lakes states consider that their alternative to a negotiated settlement might be the possible loss of a \$7 billion fishery. It would share the burden of the monetary loss inflicted by the spread of Asian carp into the CAWS, rather than placing it on one industry (shipping) or wiping out another (fishing).

The Compensation Principle, a theory associated with the field of Law and Economics, states that a resolution is efficient if "the gainers could potentially compensate the losers so that the latter will accept the change and the gainers still remain better off."<sup>120</sup> For instance, if the shipping industry expects to lose \$235 million per year if the locks are closed, and they calculate the chances of Michigan obtaining an injunction forcing closure of the locks to be 50%, then they should be willing to accept any amount greater than \$117.5 million for every year the locks are closed until an alternative solution is found to definitively keep Asian carp out of Lake Michigan.

Similarly, if the Great Lakes states believe that the Dispersal Barrier System has only a 50% chance of keeping the Asian carp out of the lake without closing the locks, and that the delay in obtaining an injunction from a District Court would be too late to be effective, then their best alternative to a negotiated agreement would be a 50% chance that

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<sup>120</sup> Nicholas Mercuro & Steven G. Medema, *Economics and the Law*, 19 (Princeton University Press 1997).

Asian carp destroy their \$7 billion fishery. Theoretically, they should be willing to pay \$3.5 billion to keep it. Reality in state and federal budgets, as well as politics, will make that number much lower, but, compared to a \$7 billion dollar annual loss, a \$117.5 million payout is reasonable. These are purely hypothetical figures, but they underscore the point that there is room for negotiation. Alternatively, the competing interests may consider arbitration within an agreed upon range, for instance, the range between the two separate shipping loss estimates.

#### **IV. Conclusion**

There is broad agreement that Asian carp present a terrifying threat to the Great Lakes. It is equally obvious that there is a fundamental disagreement over the proposed method of preventing that threat. The Supreme Court has decided to stay out of the debate, perhaps not believing that "the principle to be applied [is] one which the court is prepared deliberately to maintain against all considerations on the other side," as Justice Holmes wrote in *Missouri v. Illinois* over one hundred years ago.<sup>121</sup> Prospects for the Great Lakes states in District Court are not certain, as the delay may at best grant them victory on their position, closing the locks, rather than their interest, which is keeping Asian carp out of Lake Michigan. The CARP ACT faces an almost insurmountable hurdle. The parties' best option may be to negotiate, or agree to arbitration, with the understanding that we all stand to lose if they cannot agree to a viable resolution.

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<sup>121</sup> *Missouri*, 280 U.S. at 521.