

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS

STATE OF MICHIGAN, STATE OF WISCONSIN,)
STATE OF MINNESOTA, STATE OF OHIO,)
and COMMONWEALTH OF PENNSYLVANIA,)

Plaintiffs,)

v.)

UNITED STATES ARMY CORPS OF)
ENGINEERS and METROPOLITAN)
WATER RECLAMATION)
DISTRICT OF GREATER CHICAGO,)

Defendants.)

Case No. 1:10-cv-04457

Hon. Robert M. Dow, Jr.

PLAINTIFFS' POST-HEARING MEMORANDUM IN SUPPORT OF THEIR MOTION
FOR PRELIMINARY INJUNCTION

I. The Preliminary Injunction Factors.

Plaintiffs' Brief (Dk. #14-1), Reply (Dk. #88) and August 23, 2010 oral argument (Tr. 14) discussed the preliminary injunction factors and their interrelation under the "sliding scale" applied by the Seventh Circuit. This memorandum will briefly analyze the hearing and written testimony in the context of those various factors.

II. The record evidence shows that Plaintiffs will suffer irreparable injury if a self-sustaining population of Asian carp is established in the Great Lakes, and that the establishment of such a population of Asian carp is both likely and imminent if additional measures to stop the invasion are not taken immediately.

A. We are at a "critical juncture."

Despite Defendants' attempts to lull the Court into believing that any injury from an Asian carp invasion is decades away, as explained in Plaintiffs' Brief and Reply, the crucial injury for purposes of this preliminary injunction motion is not the widespread economic and ecological harm that will ultimately be caused by the carp after they are established in the Great Lakes. The crucial injury occurs when a sufficient number of carp enter the Great Lakes system to establish a self-sustaining population. This is the "tipping point" or "critical juncture," the latter phrase provided by Mr. Chapman — the federal government's leading Asian carp authority — who admitted that he believed a critical juncture in an invasion is reached both when the invasive species is poised to escape from a contained area into a large water system, and when the species is on the verge of becoming self-sustaining. (Tr. 407-410; 422-423.)

The status quo is that Asian carp have overrun Illinois waterways, entered the Chicago Area Waterway System (CAWS) and breached the Corps' electrical barriers, but apparently have not yet started reproducing in Lake Michigan. Fortunately, while the CAWS is large, it is far smaller than the Lake and provides several points where lakeward migration of the carp can be prevented. Unfortunately, with each day the Corps and the District routinely open locks and

unprotected sluice gates, and fail to put other physical barriers in place, the tipping point moves that much closer.

Three highly qualified scientists have confirmed the critical nature of the situation:

- Dr. Lodge: "I think there is a risk, a very urgent and imminent risk of invasion given the demonstrated presence of bighead carp with unimpeded access to Lake Michigan and the indication from eDNA that the same situation applies to silver carp." (Tr. 91.)
- Dr. Newcomb¹: "In my opinion, . . . every passing day, month and year that Asian carp are not prevented from entering the Great Lakes, the probability increases that a reproducing population will become established in the Great Lakes . . ." (Dk. #88-1, pp. 7-8.)
- Mr. Chapman indicated on the questionnaire provided to the Corps' expert panel that an Asian carp invasion was "imminent." (Tr. 432-433.) At the hearing, he explained, "And I went with 'yes' because . . . the fish are potentially getting in, and we don't really know when, but it's possible they could be, . . . achieving those populations any time." (Tr. 433.) He also testified that from a fisheries standpoint, it "makes a lot of sense" and would be a "wise move" to try to stop Asian carp in the CAWS from getting into the Great Lakes. (Tr. 423.)

B. The history of Asian carp in U.S. waterways supports likely establishment in the Great Lakes if their migration through the CAWS is not stopped immediately.

Nothing has stopped the Asian carp's northward advance. Asian carp have in a few short years gone from living in a few contained aquaculture ponds, to literally overrunning most of the Mississippi River and its connected rivers and tributaries. There is every reason to believe that this relentless march north will continue unless effective roadblocks are established:

- When fish populations get denser, they "will move to new areas" seeking suitable habitat and resources. (Wooley, Dk. #16-19, ¶ 25.)
- The invasion hasn't "stalled." Mr. Chapman said a lag is common with species invasions, but is likely to be followed by exponential population growth of the species. (Tr. 388; 417-420; 418-419.) He noted that "rapid response" measures to control or eradicate the carp should be employed during such a lag. (Tr. 419-420.) One such opportunity was missed when the carp first escaped to Southern waters. (Chapman, Tr. 407-408.)

¹ Dr. Newcomb has substantial expertise in fisheries biology and extensive fisheries research and management experience involving the Great Lakes connected waters. (Dk. #11, pp. 15-25.)

The Great Lakes habitat is suitable for Asian carp. The overwhelming evidence establishes that some or all of the Great Lakes will provide habitat suitable to an Asian carp population. This is discussed in detail in Plaintiffs' Brief (pp. 24-25) and Reply (p. 5) and in the affidavits of Dr. Newcomb. The evidence confirms that nearshore areas and waters connected to the Great Lakes are likely habitat for the carp:

- There are 22 rivers in the Great Lakes region that are of suitable length for Asian carp reproduction, plus more in Canada. (Chapman, Tr. 402-403.)
- "[T]here is a significant concern that Asian carp will thrive in the nearshore waters, drowned rivermouths and bays, connecting waters, large rivers tributary to the Great Lakes, and many of the over 10,000 lakes that are present in the state." (Newcomb, 2nd Aff., Dk. #88-1, ¶8.)
- The St. Joseph River in southwest Michigan is a likely place for Asian to spawn. "It's one of the first places we'd look at." "We have no reason at this point to believe" that this river wouldn't support "Asian carp reproduction and recruitment, recruitment being survival of the young up to an adult." (Chapman, Tr. 403.)
- Asian carp "may become established in embayments, estuaries, lagoons, and river mouths" and these "types of water bodies are found within Lake Michigan and through out the entire Great Lakes basin." Asian carp "would also likely invade the Lakes' tributary streams and rivers where they would most likely spawn." (Wooley, Dk. #16-19, ¶¶ 23, 25.)

As for the rest of the Great Lakes, the weight of the evidence supports the likelihood that Asian carp can survive, and possibly thrive, in their open waters:

- A "sophisticated," "complex," peer reviewed study by a Mr. Chin predicted that the likely range for silver carp in North America "extends well into southern Canada and includes all of the Great Lakes." (Chapman, Tr. 401-402.)
- Dr. Cooke's model is suspect. Concerning Lake Balaton, Hungary "[a]ccording to the Cooke model, the fish should have a tough time there [because, according to the Cooke theory, there would be insufficient food sources in that lake]. What we find, in fact, is that the fish in that particular body of water are quite robust. They're large and very, very fat." (Chapman, Tr. 406.)²
- Dr. Newcomb concurred: "While the argument has been presented by some researchers that Lake Michigan is a "plankton desert" and therefore not suitable for habitat by Asian carp, I believe that the existing planktivorous fish community provide evidence to the contrary." (Newcomb, 2nd Aff., Dk. #88-1, ¶7.)

² Defendants asked Dr. Lodge about a 2002 article he co-authored that predicted Asian carp would not spread rapidly through Great Lakes. This article included its own disclaimer (must be taken with "caution") and by its own terms stated that it didn't address the likelihood that Asian carp would invade inland waterways and near shore areas. (Tr. 134, 197-199.)

- Mr. Wooley made similar observations, noting Asian carp: "prefer a wide temperature range, indicating their ability to thrive from the northernmost waters of the Great Lakes to the waters of the middle Mississippi River Basin," "prefer large river and lake habitats . . . which are abundant in the Great Lakes . . . ecosystems," and "seem well suited to life in the Great Lakes." (Dk. #16-19, ¶¶ 23-24.)

C. There are already multiple Asian carp above the electric barrier.

The record is clear that the migration of Asian carp into Lake Michigan is imminent: they are at this moment north of the electric barrier, with nothing between them and the Lake except locks and sluice gates:

- See Plaintiffs' Brief (pp. 2-3) and Reply (pp. 12-14).
- Mr. Chapman admitted that he believed there are at least a few Asian carp individuals in the CAWS north of the electric barrier. (Tr. 412.)
- Dr. Lodge states this as well. (Tr. 91.)
- General Peabody does not dispute that there are multiple Asian carp above the barrier. (Tr. 339.)
- One carp has already been caught above the barrier.
- There have been 60 positive eDNA samples taken from above the barrier. (Dk. #47-8, Quarles Dec., ¶ 57.)

Defendants are quick to point out that eDNA sampling cannot alone establish the "abundance" of carp in the CAWS because the test can't absolutely identify whether one or more individual fish are responsible for a positive result. However, even if only half of the positive samples are from distinct fish, that would mean there have already been at least 30 Asian carp in the CAWS. Furthermore, given that the CAWS is a huge waterway, and even with eDNA sampling methods only relatively small portions of the waterway can be sampled for Asian carp, it would be unrealistic to assume that the Lodge team obtained a sample from every Asian carp above the barrier. As discussed in § II.F., no sampling technique will identify every Asian carp in a water body as large as the CAWS.

D. The only scientific opinion and analysis in the record supports the conclusion that the Asian carp above the barrier got there by going through the barrier.

The Defendants repeatedly assert that the eDNA test results aren't sufficiently reliable to support a decision to close the locks because the Asian carp DNA fragments identified by the tests could have come from: 1) carp eaten by birds, 2) sewage discharged from treatment plants, 3) ballast water or 4) from the carcasses of dead carp.³

On the other hand, Dr. Lodge carefully explained why he and his team of scientists concluded that a positive eDNA test sample meant that a live Asian carp had released DNA material in the vicinity of the sampled water within the prior two days. (Tr. 53, 56, 71.) Dr. Lodge testified that he and his team had considered all of the alternative hypotheses, and had investigated whether there was any likelihood that they could explain some or all of the positive test results.

- **Ballast water.** Dr. Lodge determined that some of the areas where positive test results occurred did not even have barge traffic (the Wilmette and North Shore Channel areas). (Tr. 72.)
- Coast Guard and barge operators assured Dr. Lodge's team that all barge operators were abiding by the Coast Guard regulation banning ballast water discharges north of the electric barrier. (Tr. 72.)
- **Sewage.** The "extensive biological processing" that occurs in such a treatment plant more than likely would destroy any testable DNA fragments. (Lodge, Tr. 73.)
- Lodge and his team repeatedly tested the waters as close as they could to the four sewage treatment plants discharging into the CAWS, and never had a positive result from that effort. (Tr. 73.)
- **Bird excrement.** This theory was the subject of "lots of conversations and thinking and brainstorming" by the team of scientists. (Tr. 74.)
- While theoretically possible "you could not be talking about large quantities of DNA . . ." Given the "dilution factors," odds are against DNA from bird excrement ending up in even one, let alone *all* the samples. (Tr. 74-75.)
- Lodge's team monitored where birds tended to congregate in the CAWS and could find no consistent pattern that would suggest that birds had excreted the carp DNA that was showing up in their positive samples. (Tr. 75.)

³ General Peabody essentially admitted that these excuses for not accepting eDNA results were merely "hypotheses" for which the Corps had no real "proof." Wendella tried to offer such proof but failed. Their expert, Dr. Ficetola, ultimately established that the DNA fragments targeted by Dr. Lodge's testing regimen were likely from a live Asian carp because they weren't "short" strands (e.g., less than 150 base pairs, [Tr. 250]; Dr. Lodge's team used stands that were at least 200 base pairs in length, [Tr. 42]) of the sort that he had suggested in his affidavit *might* survive in the gut of a bird. (Tr. 333-334.)

- No one has produced any evidence to support this theory that the positive test results were from carp eaten by birds. (Tr. 75.)⁴

Dr. Lodge also explained how he had determined that the evidence fully supported his conclusion that positive eDNA test results established the existence of live Asian carp in the CAWS. He referenced in his testimony a graphic that he had used when making presentations about eDNA testing, including presentations to the Corps. (Tr. 65; Pl. Ex 2, p. 10.) This graphic shows that his conclusions are supported by the fact that:

- a live Asian carp had either been sighted or captured in an area where his team had obtained positive eDNA sample results,
- positive samples had been obtained in several reaches of the CAWS in 2009 and 2010,
- positive samples had been obtained from the same area in the CAWS in the same year on repeated trips, and
- multiple positive samples had been obtained in a single trip. (Tr. 68.)

The combination of all four of these confidence indicators in several reaches of the CAWS that were tested led Dr. Lodge to the opinion that his team's sampling of the CAWS established the existence of multiple live Asian carp above the electric barrier. This opinion was unrebutted by any other expert. Based on this conclusion, and his extensive experience with aquatic invasive species, Dr. Lodge further opined, as noted above, that there is a "very urgent and imminent risk of invasion" of the Great Lakes by Asian carp. (Tr. 91.)

E. There is no proof that the electric barrier is 100% effective at preventing Asian carp from passing through it to Lake Michigan which creates the likelihood that more Asian carp will enter the CAWS and then the Great Lakes.

Given the high likelihood that there are multiple Asian carp north of the electric barrier, and the general agreement that minimizing the number of additional carp that have access to

⁴ Dr. Lodge also explained that, while not going to the reliability of eDNA testing, in his estimation, it was unlikely that live Asian carp above the electric barrier came from either bait fish or cultural releases, at least as to the silver carp above the barrier, since silver carp are not raised in the aquaculture industry and would not generally be available to release into the wild, either as cultural releases or as bait fish. (Tr. 77; see also, Chapman Dec., Dk. #47-18, ¶ 32.)

Lake Michigan is the highest priority, it is critical that effective measures be implemented to stop any more Asian carp from entering the CAWS from below the electric barrier. Unfortunately, the indisputable evidence established that the electric barrier itself is the "most important piece" of the Corps' "defense" against the advance of the carp (Tr. 300), but that this so-called "barrier" is not up to the task.

The unreliability of the electric barrier is demonstrated by:

- The capture of the live carp, and the 60 positive eDNA test results obtained north of the barrier.
- The fact it is experimental. "The electric barrier system is considered experimental and temporary fix to this problem . . ." (Dk. #47-3, p. 36) approved by General Peabody, Tr. 315.)
- The fact that, even though it uses off the shelf field generators, they had never been used in an application as large and complex as the CAWS; the previous applications were intended only to "deter or to stop fish from swimming into pipes, either outfall pipes or inlet pipes, as well as to stop fish from swimming through small channels between various water bodies." (Peabody, Tr. 326-327.)
- The fact that no previous application of the electric barrier technology had ever come close in magnitude or importance to its purpose in the CAWS. (Peabody, Tr. 327-328.)
- The fact that there have been no prior applications or studies of this technology specifically for deterring Asian carp. (Peabody, Tr. 328.)
- It's inability to operate "for several weeks and perhaps a few months" of the year at optimal parameters due to high water temperatures and/or high salinity. (Peabody, Tr. 322.)
- It's inability at its current operating parameters to deter juvenile Asian carp. (Peabody, Tr. 323-325.)
- The other facts that raise serious concerns about the barrier are discussed in detail in Plaintiffs' Brief (pp. 14-15) and Reply (pp. 6-14).

F. Conventional sampling techniques do not and cannot prove that there are too few Asian carp in the CAWS to create a sustainable population if they migrate to the Great Lakes.

The primary reason the Corps believes there are too few Asian carp above the electric barrier to create a reproducing population in the Great Lakes is because they have caught only one Asian carp with traditional fish sampling methods, i.e., electro-fishing and netting. (Tr. 336; Tr. 412, 416; Wooley Tr. 464, 468.) The problem with this logic is that conventional sampling

methods are not sensitive enough to accurately determine the leading edge of an invasion by Asian carp.

- As in his Declaration, Mr. Chapman testified that Asian carp are exceptionally difficult to net. (Tr. 416-417.) Mr. Chapman described how he had radio tagged a few Asian carp so he could track where they were in a body of water, and it was still "a nightmare trying to capture – recapture those tagged fish, even when you know where they are." (Tr. 417.)
- General Peabody acknowledged that the primary reason the Corps turned to Dr. Lodge and eDNA sampling was because the Corps "needed something more sensitive . . . than the traditional techniques . . ." (Tr. 337.)
- Dr. Lodge agreed, testifying that "the traditional tools . . . even with extensive efforts, even with extraordinary efforts, catch only a small proportion of even fish that are easy to catch" noting "both silver and bighead carp are particularly difficult to catch with traditional tools." (Tr. 30.)

Mr. Wooley, nevertheless, stubbornly insisted on a preference for these traditional tools over eDNA sampling results, claiming these methods have an "advantage" because they are "tried and true." (Tr. 440.) He testified that even though traditional methods had shortcomings, those could be "overcome by repetition, repetition, repetition, repetition." (Tr. 489.) To emphasize this effort, he noted that monitoring teams had expended about 3200 hours of effort since "last fall" sampling the CAWS and had strung "1200 yards of gill net." (Tr. 449.)

Mr. Wooley's emphasis upon the scale of these efforts does not, from a scientific perspective, establish the reliability of these techniques to determine the abundance of Asian carp in the CAWS:

- The CAWS is a regional waterway that is over 70 miles long and includes various water bodies, including all of Lake Calumet. Even the 3,200 hours of effort could physically sample only a small portion of the entire water column.
- Mr. Wooley acknowledged there were no peer reviewed scientific studies establishing the effectiveness of the traditional methods he described in detecting bighead or silver carp in an environment where they are not abundant. (Tr. 496.)
- He also admitted that the "control" effort in carp- infested waters of the Illinois River he described was not designed to establish the efficacy of the methods in determining the number of fish present. (Tr. 527-528.)
- Dr. Lodge identified a peer reviewed study done by Greg Sass that had used a scientific approach to determining the efficiency of using traditional methods to sample Asian carp in an area where the carp were abundant. (Tr. 30-31.) Mr. Sass and his team "devoted

extraordinary efforts" to catch carp in the study area but were only able to capture less than one percent of the carp in the pool.

As Mr. Chapman said, fishing for Asian carp in the immensity of the CAWS is "searching for a needle in a haystack, . . . [and] in any case capture of one fish probably means there are many uncaptured fish." (Dk. #47-4, p. 262.)⁵

III. There is no serious dispute that a self-sustaining population of Asian carp in the Great Lakes will cause major ecological and economic harm.

Although the Corps now seems to take the position that Asian carp could become established in the Great Lakes without causing great harm, this was not the position it took in the Supreme Court. Relying on declarations submitted there by both General Peabody and Mr. Wooley, the United States' brief admitted that:

[A]llowing a reproducing population of Asian carp to establish itself in Lake Michigan *likely would be an irreparable injury*, . . .⁶
* * *

As discussed above, we agree that the forecasted harm to the Great Lakes from the establishment of a population of Asian carp -- if it were to occur -- would be both *grave and irreparable*.⁷

Furthermore, in his testimony at the hearing, Mr. Chapman clarified statements in his declaration regarding potential harm to the Great Lakes:

- He affirmed even if the fishery wasn't completely destroyed, there could "still be major economic and environmental damage" from an invasion. (Tr. 424.) In comparison to the damage already done in the Mississippi and Illinois Rivers he added "The value of the Great Lakes fishery is a lot higher, so you have a lot more to – they have a lot more to lose in that case in terms of economics." (Tr. 424.)
- When asked if he believed that there was no need to take measures to control Asian carp now because they might be controlled after they get into the Great Lakes, he said, "No, I'm not suggesting that. I'm not suggesting anything of the kind." (Tr. 408.)

⁵ Another member of the Corps' expert panel opined that, "if there are a hundred carp in the CAWS, you would have difficulty catching one with standard commercial fishing techniques and electrofishing, . . . if there are more, then perhaps you might start to catch fish." (Dk. #47-4, p. 259.)

⁶ U.S. Memo in Opposition to Motion for Preliminary Injunction, p. 43, dated January 2010, filed in Supreme Court http://www.supremecourt.gov/specmastrpt/US_Memorandum_in_Opposition.pdf (emphasis added).

⁷ *Id.* p. 47 (emphasis added).

- He acknowledged that he was unaware of any existing technology that would control or eradicate Asian carp, noting that even though there was some evidence that populations of carp could be lowered through commercial fishing, this would not be even a "possibility" in the Great Lakes where the carp would "be much more difficult to catch . . ." (Tr. 410.)

Mr. Chapman also described with graphic detail, the sort of damage jumping silver carp can and have inflicted on boaters, including himself, and their property. (Tr. 426-428.)

IV. Even if the preliminary injunction remedy requested by Plaintiffs will cause some temporary localized economic harm, the facts confirm that the balance of harms tips decidedly in favor of Plaintiffs who will incur long term irreparable harm to the environment and to their economies spread throughout the entire Great Lakes region if a self-sustaining population of Asian carp becomes established in the Great Lakes.

A. Any concerns arising from potential flooding are moot; Plaintiffs' proposed injunction would allow opening of the locks and sluice gates —consistent with current practices — when necessary to avoid flooding.

Defendants have argued throughout this litigation that the relief requested by Plaintiffs will lead to flooding and various economic and ecological harms due to obstruction of the free flow of water through the CAWS.⁸ As set forth below, Defendants' concerns of flooding and associated economic harms are moot because the relief requested by Plaintiffs will allow the District and the Corps to manage flood waters as they currently do. The installation of removable sluice gate screens equipped with automatic raking machines, along with block nets in the Little Calumet River, would allow free passage of water through the CAWS while minimizing the risk of adult Asian carp passage.

Defendants have voiced the concern that, if screens are installed in all 12 sluice gates at the Chicago River Controlling Works and the O'Brien Lock and Dam, those screens could become clogged with debris and diminish the capacity to release excess water back to Lake

⁸ It bears mentioning that Defendants' concerns about odors and ecological harm due to stagnant water are moot because, in their Reply Plaintiffs amended the relief requested to allow the sluice gates to remain open, provided that screens are installed, so "discretionary diversion" water can continue to flow into the CAWS.

Michigan. (Dk. #47-9, p. 6; Dk. #52-1, p. 26; Tr. 551-552.) However, it is clear that this is not an insurmountable issue.

At the hearing, the Corps' engineer, Dr. Su, testified that the installation of screens in all 12 sluice gates would likely raise the water level in the CSSC by only three tenths of a foot. (Tr. 570-571.) However, Dr. Su acknowledged that his modeling, which suggested that if the screens became clogged with debris it would cause flooding, did not consider the installation of automatic raking machines. (Tr. 571.)

Defendants' concerns with installing screens and raking machines related primarily to the time and expense associated with such an undertaking, noting that it might take up to a year to complete and would likely require some structural modifications to the existing facilities. (Tr. 542-543; 597-600.) However, even though there would be some added cost, it pales in comparison to the grave and irreparable harm that will occur if Asian carp establish a breeding population in the Great Lakes, and the efforts that will be required to even attempt to control that population.

Mr. Cox testified that automatic raking machines will not always remove 100% of the debris that becomes caught in the screens, and the screens will likely have to be cleaned manually on an almost annual basis. (Tr. 550-552.) However, logic dictates that it is not necessary to always remove 100% of the debris from the screens. Rather, automatic raking machines could facilitate the free flow of water through the sluice gates while preventing the passage of most Asian carp. As a second line of defense, the sluice gate screens could be designed to be removable. (Tr. 551-552; Dk. #132-1, p. 2.) Should automatic raking machines be inadequate to keep the screens free of debris, the Corps and the District would then have the option of removing the screens if necessary to prevent flooding.

Mr. Cox (Tr. 542-543) and Mr. Staudacher (Tr. 597-600) testified that physical constraints in the existing structures at the Chicago Controlling Works and O'Brien Lock and Dam could limit the Defendants' ability to install automatic raking machines and removable screens at certain sluice gates, particularly if the screen design was that proposed in Plaintiffs' Reply.⁹ But there is no evidence that these concerns present insurmountable design problems. They can and should be addressed through timely development of appropriate engineering plans for screens and rakes adapted to the particular locations, that will effectively deter the passage of adult Asian carp.

The Corps has also expressed concern with Plaintiffs' request that block nets be installed in the Little Calumet River. (Dk. #47-9, pp. 6-7.) This concern parallels the concern about sluice gate screens – that the nets could become clogged with debris and cause floods. (*Id.*) However, Defendants have not identified any modeling or factored any methods of debris removal into these considerations. Defendants have not identified any reason why they could not monitor the block nets and, if those nets become clogged with debris, either remove the debris or simply remove the net to prevent flooding, preferably after first installing one or more block nets downstream of the clogged net.

B. Defendants presented no evidence, other than of some increased costs, that rebuts the assertion that police, fire, maritime and homeland security issues can be adequately addressed through careful planning.

The City of Chicago and the Coast Guard have repeatedly asserted that closure of the Chicago and O'Brien locks would impair both emergency response functions and non-emergency patrols currently performed by the City and the Coast Guard. Plaintiffs have fully addressed

⁹ Plaintiffs requested that the screens conform to specifications detailed in Appendix A to the Corps' Interim III Report (Dk. # 56-2, p. 91), "or otherwise as will be as effective at preventing Asian carp from passing through these structures as the gates or screens specified in that Report." (Dk. #88, p. 62.) Plaintiffs did not, and do not insist upon those particular specifications, which were intended solely to provide objective criteria, already identified by the Corps, for the screens' opening size and consequent ability to deter fish passage.

these concerns in the Brief and Reply. Nothing new was presented at the hearing in this regard, except that the Corps acknowledged that, in addition to the planned several month closure of the Chicago lock this coming fall, a similar closure of the O'Brien Lock has been planned since 2005 and will be effectuated once funds are secured. (Tr. 548-549.)

Dr. Su testified that most flood events occur during the warmer months (the implication being that, because the Chicago Lock will be closed from November through April, there is less of a risk that the lock will have to be opened to reverse flow). (Tr. 564-565.) However, Dr. Su acknowledged that there have been several flood events that have occurred during the colder months (Tr. 571), so obviously, this is no basis for not extending the closures as requested by Plaintiffs.

During the five months that the Chicago Lock will be closed for repairs, the Corps will have watertight bulkheads installed on either side of the lock to dewater the area. (Dk. #47-12, p.3.) The Corps will also have a crane on standby so that, should the lock absolutely be needed to reverse flow and prevent a flood, those bulkheads can be removed. (Dk. #47-12, p. 3.) The same practice is planned for when the O'Brien Lock is closed for repairs. (Tr. 549.) There is no reason why the same plan could not be implemented to effectuate the relief requested by Plaintiffs. General Peabody acknowledged that this would allow cycling of the lock gates if necessary. (Tr. 342-343.) While the Defendants raised concerns that it would take a long time to remove the bulkheads, they are apparently comfortable with this plan for November 2010 through April 2011, as well as whenever the O'Brien Lock will be closed.

Further, the notion that keeping a crane on hand will be too expensive is another selective objection raised by Defendants. (Tr. 283-284.) The cost of a crane is apparently prohibitive when it is part of the relief requested by Plaintiffs, but not when it is part of a lock repair project initiated by the Corps.

C. The Defendants' estimates regarding the economic impact of the injunctive relief sought by Plaintiffs are seriously overstated.

This topic has been extensively addressed in Plaintiffs' Brief (Dk. #14-1), Reply (Dk. #88), and the Affidavits of John Taylor. (Dk. #12 and #88-3.)

At the hearing, the Coalition presented the testimony of their expert economist, Dr. Schweiterman, as well as a report prepared by Dr. Schweiterman. (Coalition Ex. 2.) The extent of economic harm predicted by Dr. Schweiterman was overstated, primarily because the bulk of it related to increased costs as a result of flooding, and expansion of the Tunnel and Reservoir Project (TARP). (Tr. 641-644.) These costs are not relevant because, as set forth above, the relief requested by Plaintiffs will not exacerbate flooding, and because the costs of constructing TARP will be incurred regardless of whether Plaintiffs' requested relief is granted. In addition, another substantial component of Dr. Schweiterman's estimated harm was based upon the no longer relevant assumption that discretionary diversion would be prohibited, thereby impairing water quality and property values. (Tr. 643-644.) Finally, as explained by Dr. Taylor, while Dr. Schweiterman's estimate of direct transportation-related impacts is similar to Dr. Taylor's, other aspects of his analysis and conclusions were not well documented or were otherwise questionable. (Dk. #12, pp. 48-51.)

CONCLUSION AND RELIEF REQUESTED

As set forth above, and in the briefs previously filed and hearings conducted in this matter, it is vital that Defendants be ordered to: (1) immediately take all possible steps, consistent with the protection of public health and safety, to minimize the risk of Asian carp entering Lake Michigan and establishing a breeding population in the Great Lakes; and (2) expedite the preparation of a feasibility study of options for the permanent physical separation of

the CAWS from Lake Michigan.¹⁰ To effectuate this, Plaintiffs reiterate the request for relief set forth in their Reply in Support of Motion for Preliminary Injunction. (Reply at 53-55.)

Further, consistent with the testimony and evidence set forth at the hearings in this matter, Plaintiffs modify paragraph 1 of that request for relief as follows:

Omitting the relief requested at paragraph 1.(b) and adding the following:

(h) Obtaining, at the earliest possible date, bulkheads suitable to allow closure of the O'Brien Lock; and

(i) Within 90 days of the entry of the Court's Order on Plaintiffs' Motion for Preliminary Injunction, file with the Court plans to effectuate relief requested by Plaintiffs in paragraph 1, including, as needed, designs, plans, and schedules for installation, operation, and maintenance of the physical barriers described in paragraph 1(d) [sluice gate screens and debris removal] and (e) [block nets in the Little Calumet River].

MICHAEL A. COX
Attorney General of Michigan
S. Peter Manning
Division Chief
/s/ Robert P. Reichel
Robert P. Reichel (P31878)
Louis B. Reinwasser (P37757)
Daniel P. Bock (P71246)
Assistant Attorneys General
ENRA Division
P.O. Box 30755
Lansing, MI 48909
(517) 373-7540 (phone) (517) 373-1610 (fax)
reichelb@michigan.gov
Attorneys for State of Michigan

J.B. VAN HOLLEN
Attorney General of Wisconsin
/s/Cynthia R. Hirsch, by /s/ Robert P. Reichel,
pursuant to written authorization on
October 1, 2010
CYNTHIA R. HIRSCH
Assistant Attorney General
State Bar #1012870
Attorneys for State of Wisconsin
Wisconsin Department of Justice
Post Office Box 7857
Madison, WI 53707-7857
(608) 266-3861 (phone) (608) 266-2250 (fax)
hirschcr@doj.state.wi.us
Attorneys for State of Wisconsin

¹⁰ Despite the fact that Congress first authorized the Corps to study the separation of the Mississippi River and Great Lakes Basins in 2007, the evidence at the hearing shows that the Corps internal "deadline" for completion of even the initial report focused on the CAWS has now slipped to beyond 2015. (Tr. 303-304.) Moreover, General Peabody said that he now expects that any actual separation of the watershed "would be far beyond that," and possibly over 20 years. (Tr. 304.) Given the admittedly temporary and experimental nature of the electrical dispersal barrier, such further delay in completing the feasibility study that is the essential first step toward a permanent solution is unacceptable. The evidence starkly underscores the need for an injunction requiring the Corps to act expeditiously. (Tr. 275-276.)

LORI SWANSON
Attorney General of Minnesota
STEVEN M. GUNN
Deputy Attorney General
/s/ Steven M. Gunn, by /s/ Robert P. Reichel,
pursuant to written authorization on
October 1, 2010
Steven M. Gunn (0038647)
Deputy Attorney General
David P. Iverson(0180944)
Assistant Attorney General
445 Minnesota St., #900
St. Paul, MN 55101-2127
(651) 757-1466
Steven.Gunn@state.mn.us
Dave.Iverson@state.mn.us
Attorneys for State of Minnesota

Dated: October 1, 2010
ENRA/cases/2009/Asian Carp/USDC/ILND/10.01.10 Summation

RICHARD CORDRAY
Attorney General of Ohio
/s/ Lee Ann Rabe, by /s/ Robert P. Reichel,
pursuant to written authorization on
October 1, 2010
Lee Ann Rabe
Dale T. Vitale
David M. Lieberman
Jeannine R. Lesperance
Assistant Attorneys General
Office of the Attorney General
30 East Broad Street
Columbus, OH 43215
LeeAnn.Rabe@ohioattorneygeneral.gov
Attorneys for the State of Ohio

THOMAS W. CORBETT, JR.
Attorney General of Pennsylvania
/s/ J. Bart DeLone, by /s/ Robert P. Reichel,
pursuant to written authorization on
October 1, 2010
J. Bart DeLone
Assistant Attorney General
16th Floor, Strawberry Square
Harrisburg, PA 17120
(717) 783-3226
jdelone@attorneygeneral.gov
Attorneys for Commonwealth of Pennsylvania