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Corps to Raise Parameters at Electric Dispersal Barriers, Evidence Confirms Barrier Effectiveness

As the U.S. Army Corps of Engineers continues to pursue all actions needed to contain the Asian carp threat below the Electric Dispersal Barriers in the Chicago Area Waterway System (CAWS), today the agency announced plans to increase the operation of the barriers to slightly higher parameters. The increase will occur this fall. The Corps released an Optimal Operating Parameters Report including the safety tests used to inform the decision to raise the operating parameters, along with two additional reports: the Independent External Peer Review (IEPR) to test for Asian carp environmental DNA (eDNA) and the National Environmental Policy Act (NEPA) Scoping Report for the Great Lakes and Mississippi River Interbasin Study (GLMRIS).

While extensive research and monitoring indicate that small Asian carp currently are not within the vicinity of the fish barriers, and all field telemetry research indicates the barrier is highly effective, the Corps is taking this conservative approach to operating the barrier out of an abundance of caution.

The Efficacy Study Interim Report IIA, one of three updates released by the Corps today, assesses the safety and effectiveness of the barrier at these higher operating parameters. The aspect of the report regarding safety summarizes a series of in-water tests on the barrier that include addressing field-strength mapping, sparking potential during barge fleeting and collision, voltage potentials between barges traversing the barriers, personnel in-water shock potential, stray-current corrosion potential, and optimal settings for the parasitic barrier system.

The testing shows there is no appreciable increase in risk to public safety with an increase of operational parameters from the current settings of 2.0 volts per inch, 15 hertz and 6.5 millisecond pulse to the new settings of 2.3 volts per inch, 30 hertz, and 2.5 millisecond pulse length. However, it also shows that operating barriers IIA and IIB concurrently increases the area of risk for a person in the water and an increased potential for sparking in adjacent fleeting areas. The Corps does not intend to operate barriers IIA and IIB simultaneously.

“The Corps is committed to operating the barriers safely and effectively,” said Major General John Peabody, commander, Great Lakes and Ohio River Division. “We will continue to work with the Coast Guard and other members of the Asian Carp Regional Coordinating Committee to ensure safe navigation, assess the Asian carp threat, and make informed decisions regarding barrier operations.”

As part of an aggressive monitoring program, the Corps has expanded the use of ultrasonic telemetry to determine fish behavior near the electric fields. To date, the Corps has tracked nearly 1.9 million detections of tagged fish in the barrier area, with no indication of tagged fish having crossed any of the electric barriers in the upstream direction. Between July 5 and August 11, 2011, our stationary receivers no longer detected one of the 166 transmitter tags. On August 11, the tag reappeared stationary approximately two miles above the fish barrier and has remained there since. Because the tag was not detected by any of the 12 intervening receivers, Corps biologists conclude that this tagged fish did not swim upstream through the barrier. In addition, a small fish telemetry project has supported the conclusion that no fish are able to move through the barrier in the upstream direction. In June 2011, Corps biologists tagged and released 14 small non-Asian carp fish above and below Barrier IIB. Of the six fish released above the barrier, two did pass downstream through both arrays of Barrier IIB, which appears to have occurred, as a result, of being immobilized by the electrical current. Two fish moved down into the electric array of Barrier IIB and remained there. The fish have most likely died since movement and have not been detected since. The last two fish moved upstream away from the barriers.

In addition, the Corps released today the Independent External Peer Review (IEPR) for testing Asian Carp environmental DNA (eDNA). The panel determined that the eDNA sampling and testing methodology is sound for detecting silver and bighead carp DNA but confirmed that the eDNA technology cannot indicate the source of Asian carp DNA. The Corps and its multi-agency partners of the Asian Carp Regional Coordinating Committee (ACRCC) have been using the surveillance tool to detect the genetic presence of invasive bighead and silver carp DNA near the CAWS.

The IEPR also determined the eDNA methodology has a number of advantages and limitations. Advantages include sample collection can occur over a large area and very rapidly, cost per sample is relatively low, and eDNA sampling allows for coverage over a larger area than traditional fishing methods allow. The limitations include that eDNA does not provide conclusive proof of the physical presence of live fish, does not provide information on the size or age of fish that may be present, and presents a time delay of 7-10 days inherent between collection of water samples and processing for eDNA. The Corps adopted seven of the eight recommendations of the IEPR panel, mostly related to additional research. The one recommendation not adopted had to do with research to distinguish hybrids of silver and bighead carp, which is not necessary for current management purposes.

Despite the limitations of eDNA, the ACRCC will continue to use it to inform decisions related to more traditional monitoring methods such as fishing, netting, and electro fishing operations.

The final document released today is the NEPA Scoping Report, an interim product to the Great Lakes and Mississippi River Interbasin Study (GLMRIS). The report documents the methods and procedures followed during the scoping process, as well as summarizes the comments received. The GLMRIS team will use the document to assess topics of interest in order to inform the scope of the study.

All of the documents are available on the Chicago District Web site at www.lrc.usace.army.mil. The NEPA final report is available on the GLMRIS website at www.glmris.anl.gov. For additional information, please contact the Chicago District Public Affairs Office at (312) 846-5330.

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