9053 Route 148, Marion, Illinois 62959

Carterville FWCO

2013 Monitoring Fact Sheet

Dual-Frequency Identification Sonar (DIDSON)

Chicago Sanitary and Ship Canal – Aquatic Nuisance Species Dispersal Barrier

Contact:

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Overview:

The DIDSON is an acoustic camera that can be used in turbid water to observe fish behavior. Observations of fish at the Chicago Sanitary and Ship Canal (CSSC) aquatic nuisance species dispersal barrier may provide valuable information about fish behavior near the barrier.

Scope:

Materials and Methods: All DIDSON work in and around the barrier is performed in accordance with the U.S. Coast Guard permit and following the predefined USCG procedures and guidance.

The DIDSON unit is deployed from a survey boat (minimum length 20 ft.). The DIDSON system consists of four main components: 1) DIDSON; 2) boat-mounted deployment system with pan/tilt; 3) a laptop computer to store and analyze data; and 4) a generator or other continuous power supply. A safety craft accompanies the DIDSON survey boat at all times.

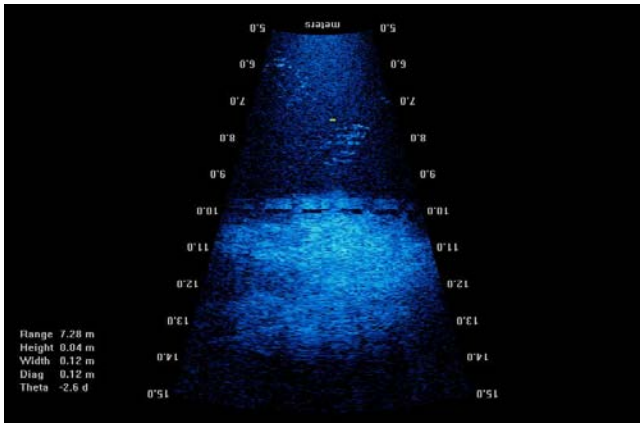
Reconnaissance and Inspections - The DIDSON will be used to survey fish in the barrier area several times throughout the year. The DIDSON will also be used to observe fish behavior after barrier maintenance and for periodic inspection of the in-water components of the barrier. The Corps will supply equipment and staff to assist the U.S. Fish and Wildlife Service with these efforts.

Caged Fish Study - The USFWS has moved live fish through the dispersal barrier and recorded the fish behavior using a DIDSON in the past but is now using a standard camcorder. The fish that are used are gizzard shad, which are collected in the CSSC. The fish are moved through the barrier using a non-conductive, PVC cage that is mounted alongside a 20-foot boat. The Corps may supply staff to assist with this effort.

The monitoring sub-group may chose to use the DIDSON to support other monitoring efforts including observing fish at netting locations and using the DIDSON to evaluate the effectiveness of other monitoring gears. The Corps will work with the USFWS through the monitoring team to support these requests.

Location:

CSSC Aquatic Nuisance Species Dispersal Barriers I, IIA, and IIB.



A frame of video captured with the DIDSON showing schools of small fish over Demonstration Barrier, Sept. 21, 2010.

How will this improve our current monitoring?:

The DIDSON allows the monitoring team to safely examine fish behavior near and within the electrical field while the barrier is operating. Researchers can scientifically observe how fish are interacting with the barrier and may identify if any fish successfully pass through the barrier.

The DIDSON allows the monitoring team to make real-time behavioral observations that are not possible with other hydroacoustic technologies or fish monitoring gears. The image data (video) generated by the DIDSON can be quickly processed into avi files and used on any computer, minutes after it is collected.

The DIDSON has some technical limitations. A single DIDSON unit does not provide complete cross-section coverage in the CSSC, and even though the DIDSON can easily detect fish, the species of each individual fish cannot be determined from DIDSON images.

Authority:

The Water Resources Development Act of 2007, Section 3061, Chicago Sanitary and Ship Canal Dispersal Barriers Project, Illinois, authorized this project.

Schedule:

The Monitoring and Rapid Response Work Group has scheduled DIDSON work (to include observations of caged fish) throughout Fiscal Year 2013. USFWS is the lead for DIDSON activities with USACE as support.