



Cartersville FWCO

# FY11 Monitoring Fact Sheet

## Dual-Frequency Identification Sonar (DIDSON)

### Chicago Sanitary and Ship Canal – Aquatic Nuisance Species Dispersal Barrier

#### Overview:

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

#### Scope:

**Materials and Methods:** All DIDSON work in and around the barrier is performed in accordance with the USCG 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.

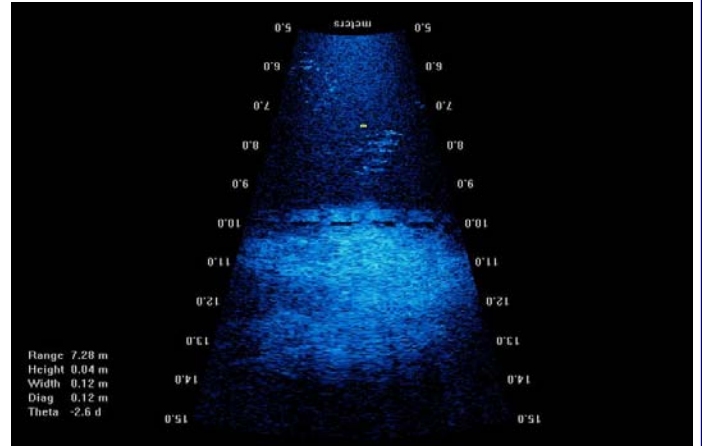
**Caged Fish Study** - The USFWS will conduct initial trials at the barrier in March. Crews will launch at the Worth ramp and field work will include capturing and viewing caged fish both in and out of the electric field. General reconnaissance video will be taken at the barrier in addition to the cage study. The Corps may supply staff to assist with this effort.

**Reconnaissance and Inspections** - The DIDSON will be used to survey fish in the barrier area several times between April and September. The DIDSON will be used to observe fish behavior during high discharge conditions in the CSSC, after barrier maintenance, and in the late summer for a periodic inspection of the in-water components of the barrier. The Corps will supply equipment and staff to assist the USFWS with these efforts.

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 Barrier I on September 21, 2010.

#### How will this improve our current monitoring?:

The DIDSON allows the monitoring team to safely examine fish behavior within the electrical field while the barrier is operating. Researchers can scientifically observe how fish are challenging the barrier and identify if they are successful at passing 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 only 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 the year in FY11. USFWS is the lead for DIDSON activities with USACE as support.