



## Robotic Inspection at Corps Navigation Structures: Demonstration Opportunities



**Objective:** to demonstrate the merits of Remotely Operated Vehicles (ROVs) to aid underwater inspections of Corps navigation structures.

**Background:** Case studies have shown that commercially available underwater robots, or ROV's, can reduce inspection costs, increase inspection rates and minimally disrupt navigation at Corps locks and dams. ERDC/CRREL has acquired a lightweight, agile ROV with imaging sonar and underwater cameras that can conduct expedient inspections or aid pre-planned diver inspections at Corps structures. We seek collaborative work with Districts to demonstrate the merits of robotic inspections at their facilities.

**Equipment Available:** The ROV ([http://www.seabotix.com/products/lbv150se\\_overview.htm](http://www.seabotix.com/products/lbv150se_overview.htm)) consists of a five-thruster chassis with color and black & white video cameras and LED lights in a tilting, waterproof enclosure. It measures 22" x 20" x 15" high, weighs about 30 lb, has a depth rating of 150 m, and is operated from the surface via a fiber-optic tether. The imaging sonar (<http://www.blueviewtech.com/>) uses a 256 planar array of 1° x 20° beams operating at 900 kHz to produce near-video quality images in low-visibility water. The system ships in portable cases and can be assembled and deployed within 30 minutes.



ROV with sonar operated by Huntington District personnel at Winfield Lock & Dam, August 2007

**Seeking Deployment Opportunities:** We seek opportunities to collaborate with District personnel to deploy the ROV at navigation or other underwater structures. We will cover our labor costs but would appreciate support for TDY and shipping costs. We will help the District to prepare an inspection plan and document the findings. Because local knowledge is critical to the success of robotic inspections, District personnel will be encouraged to operate the ROV during the inspections.

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