



NOAA Chesapeake Bay Office

Derelict Fishing Gear Study

Derelict fishing gear, including lost or abandoned nets and crab traps, can create safety, nuisance, environmental, and economic impacts in coastal waters. The Chesapeake Bay blue crab fishery—the nation’s largest—uses traps as the primary method of harvest. Conservative estimates suggest that more than 300,000 commercial crab traps are deployed in the Bay on a typical day during the summer months. Information from the Chesapeake Bay and around the United States suggests that every year, each commercial fisherman may lose as many as 30% of their traps for a variety of reasons.

Crab traps become “ghost traps” after their float line is severed by vessel propellers, chafed due to wave action, or affected by strong currents. Without floats, watermen are unable to find their traps. When these traps remain in the water, they can trap, wound, or kill fish, blue crabs, birds, reptiles, and marine mammals; harm marine ecosystems and sensitive habitats; cause economic hardship for working watermen, wholesalers, and the restaurant industry; and form hazards to recreational, commercial, and military vessels.

What Is NCBO Doing to Help?

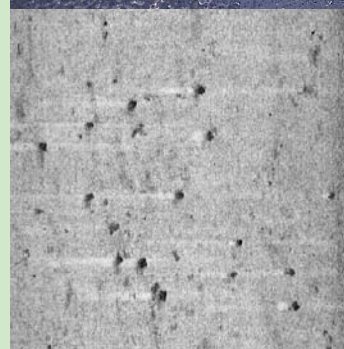
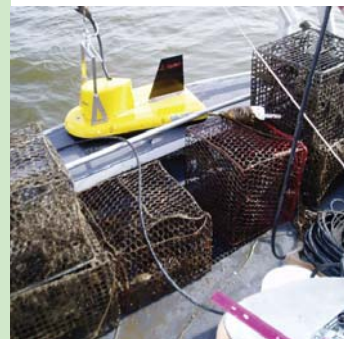
During sonar operations in the winter of 2005, the NOAA Chesapeake Bay Office’s (NCBO) Habitat Characterization and Mapping Program observed that there were many derelict crab traps in parts of the upper Chesapeake Bay. To evaluate potential effects of these traps, NCBO organized its Derelict Fishing Gear Program (DFGP), which collaborates with a number of federal, state, and academic partners, including the Virginia Marine Resource Commission, Maryland Department of Natural Resources, and Virginia Institute of Marine Science (VIMS).

DFGP is working to quantify how many derelict crab traps there are in the Chesapeake Bay, and whether they adversely affect blue crab and other resources. The program uses side-scan sonar to accurately identify, locate, and quantify derelict crab traps, and has developed experimental and field methods to estimate the effects of ghost-fishing traps on blue crabs and other species. Suspected traps are ground-truthed using underwater video cameras and recovery to verify the counts and locations of derelict pots.

Dedicated sonar surveys began in 2005 in Maryland (approaches to the Rhode, West, and South Rivers; work accomplished by DFGP) and Virginia (York River and tributaries; DFGP-funded surveys performed by the VIMS Center for Coastal Resource Management). Initial side-scan sonar surveys near Rhode and West Rivers on Maryland’s Western Shore revealed derelict trap densities from a few to several hundred per square kilometer; initial surveys in the York River and tributaries indicated similar densities. A comprehensive DFGP survey of the

Our core capabilities:

- *Ecosystem science*
- *Coastal and living resource management*
- *Environmental literacy*



Maryland portion of the Bay, informed by analysis and application of the distribution of commercial fishing effort, enabled an estimate of approximately 42,000 derelict crab traps in Maryland Bay waters. A similar DFGP-funded comprehensive survey by VIMS is under way for the Virginia portion of the Bay.

What are the impacts of derelict crab traps in the Chesapeake Bay? DFGP is conducting research to quantify the effects of derelict traps on the Bay's blue crabs and other species that may encounter the lost gear. In 2006 and 2007, baited experimental traps were deployed to simulate the effects of 'ghost fishing' by derelict traps. In addition, non-fishing traps were deployed to monitor the rate of fouling and trap degradation. The top four species captured in the experimental traps in Maryland were blue crab, white perch, pumpkinseed, and oyster toadfish; in Virginia, blue crab, Atlantic croaker, oyster toadfish, and white perch. Each experimental derelict trap captured an average of 50.6 blue crabs and 13.6 Atlantic croaker per season. This information, in conjunction with the surveys, is helping scientists and managers determine the impacts of ghost fishing traps on living resources.

NCBO is also seeking the collective wisdom of commercial and recreational fishermen and women and other stakeholders on this issue. NCBO's DFGP is trying to accumulate as much information as possible about blue crab fishing practices and other activities that could result in lost fishing gear.

What Can You Do to Help?

If you come across a derelict pot:

- Record the date and location where you found the pot or pots.
- To the best of your ability, note what kind of animals are in the pot, how many there are of each, and their condition (dead or alive, any obvious injuries).
- If possible, take some photographs.
- Send this information to Steve Giordano: 410-267-5647, Steve.Giordano@noaa.gov.
- For information on disposal of recovered pots, contact Steve Giordano.

What Are the Next Steps?

NCBO and its DFGP partners are working to determine if derelict fishing gear is a problem in the Chesapeake Bay, and if so, how big a problem it is. Once the effects of derelict traps on Chesapeake Bay living resources and habitats are quantified, specific management options can be evaluated. DFGP is evaluating the feasibility of retrieval techniques and a retrieval and recycling program. VIMS is investigating modifications to trap design (such as using biodegradable components) to offset potential adverse effects. This effort will benefit immeasurably from the participation of Bay stakeholders—particularly watermen. If action is warranted, DFGP can help to facilitate effective community-based removal, recycling, and gear loss prevention efforts with partners including resource managers, commercial watermen, recreational fishers, academia, and other stakeholders.

NCBO Mission

To focus NOAA's capabilities in science, service, and stewardship to protect and restore the Chesapeake Bay.

