



**WILLIAM & MARY**

CHARTERED 1693

## **WM-0807: Biodegradable Escape Panels and Other Mechanisms in Fishing Traps**

Inventors: Kirk Havens, Donna Marie Bilkovic, David Stanhope, Kory Angstadt

Application: Reduction of ghost fishing; environmentally friendly fishing traps and devices for crabs and other fisheries

Summary: Derelict commercial fishing gear, including nets and traps, can present safety, nuisance, and environmental impacts in estuarine waters. Blue crabs and various fish species that are entrapped and die in derelict (i.e., lost or abandoned) traps can act as an attractant to crabs, resulting in a self-baiting effect. A study by the authors showed that, on average, derelict crab traps in the lower York River caught 50 blue crabs per fishing season, in addition to numerous other fish species. The annual loss/abandonment rate for crab traps in the Gulf of Mexico and Chesapeake Bay has been estimated at 25%, meaning that derelict traps substantially reduce annual crab harvests and thus have a significant adverse economic impact. Accordingly, several states have enacted measures to reduce the ecological and economic impacts of derelict traps, including imposing degradability requirements for crab traps.

We have developed inexpensive, environmentally friendly implements that ensure that derelict fishing traps, once abandoned, can no longer continue to trap and kill fish and other species. For example, we have a PHA-based biodegradable hinge useful in Dungeness crab pots, a PHA-based biodegradable cull ring panel useful in blue crab pots, and a universal panel useful in all metal mesh fishing traps. The production costs of these products will be less than 50 cents each, likely less than 25 cents.

A particularly important feature of our technology is that the PHA implements degrade faster when a fishing trap becomes derelict than when it is actively fished, thereby reducing the frequency of product replacement (each product is designed to last an entire fishing season), while ensuring that the product deteriorates quickly when a trap becomes derelict.

Related Articles, Stories, and Publications: [article](#) by David Malmquist; [article](#) by Joe McClain.

Intellectual Property: Issued United States Patents 8,938,908 and 8,375,623

Contact Information: Jason McDevitt (757-221-1751); [jason.mcdevitt@wm.edu](mailto:jason.mcdevitt@wm.edu)