

# **A Cost Benefit Analysis of the Proposed Action to Introduce *Crassostrea ariakensis* and Continue Restoration Efforts with *Crassostrea virginica* within the Chesapeake Bay**

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## Abstract

Watermen in the Chesapeake Bay have been recording record low harvest for *Crassostrea virginica* (also known as the Eastern oyster) for the past five years, with a steady decline in landings for the past twenty to thirty years. The decline in *C. virginica* is connected to a number of factors, including: (1) overfishing, (2) diseases caused by protozoan parasites- MSX (*Haplosporidium nelsoni*) and Dermo (*Perkinsus marinus*), (3) increased sediment and nutrient loads, and (4) climatic conditions (i.e. drought).

In response to the current situation, a number of alternatives have been implemented including the establishment of sanctuaries and shell replenishment and planting. These actions, however, have not caused an increase in the oyster populations within the Bay. Due to this lack of response, it has been posited that stronger actions may be required. The most “risky” of these alternatives is the possible introduction of a nonnative oyster, or more specifically, *Crassostrea ariakensis*, an oyster native to Japan and found along the U.S. west coast.

To review the possible effects of such an introduction, the United States Army Corps of Engineers (USACE), in conjunction with the states of Maryland (Maryland Department of Natural Resources) and Virginia (Virginia Institute for Marine Science), is in the process of conducting an Environmental Impact Statement. According to the EIS, the Proposed Action (main alternative under review), is to introduce the nonnative oyster *C. ariakensis* into State sanctuaries (no harvest) and harvest reserves (harvest is allowed after five years, or maturity of oyster population) while also continuing with the present restoration efforts for *C. virginica*. The EIS process began in late 2004, with a Draft EIS expected in January-February of 2006.

This research proposes to conduct a cost benefit analysis of the “proposed action” listed within the EIS. This process will involve the following: (1) clearly define the costs and benefits; (2) determine the measurements for each category and monetize all measures; and (3) determine the net present value of the proposed action. In this case the counterfactual will be continuing with the current situation, with a possible value for harvests at zero given the present decline. The overall objective of this project will be to determine if the proposed action is beneficial given the costs associated with such action.