

**Chesapeake Bay Foundation Position Statement
on
the Use of Non-native Oysters in Chesapeake Bay**

December 2001

THE ISSUE

Impressive results from recent tests of *Crassostrea ariakensis*, a non-native oyster species, have suggested to some oyster aquaculturalists, watermen, and resource managers that official sanction should be given to commercial aquaculture of sterile (triploid) *C. ariakensis* or even to the outright introduction of reproductively capable (diploid) *C. ariakensis* to establish wild populations in Chesapeake Bay.

CBF POSITION

Until there is substantial scientifically validated information about the ecological risks and benefits associated with the use of sterile *Crassostrea ariakensis* oysters for aquaculture, a public policy decision to sanction large-scale aquaculture or outright introduction cannot be made responsibly. Therefore, the Chesapeake Bay Foundation calls for the following actions to develop a rational basis for decision-making before large-scale commercial production or introduction of *C. ariakensis* in Chesapeake Bay is considered:

- An independent review by the National Academy of Sciences (NAS) or a similar independent, technical body, with an evaluation of relative risks and benefits associated with the use of non-native oysters in the Bay and an identification of research needed before a responsible decision can be made on *C. ariakensis* introduction.
- A dedicated and funded Baywide program to conduct the research identified as necessary in the NAS review, including in-water research that meets strict safety criteria and does not represent a significant risk of de facto introduction.
- Continued field-testing, with state oversight and strict safety criteria, of the aquaculture and marketing potential of sterile *C. ariakensis* and *C. virginica*. To evaluate the potential for a controlled culture industry for both species and to maximize the information generated for decision-making, this work should be conducted throughout the relevant salinity ranges of both species.
- A comprehensive review of state policies related to oyster aquaculture in Maryland and Virginia, with recommendations for providing a framework for fostering an environmentally responsible aquaculture industry.
- An evaluation of the public actions necessary to stimulate the development of sufficient private oyster hatchery capability to support a large-scale aquaculture industry.
- A dedicated bi-state initiative to educate the public about the danger to the Bay posed by illegal private introductions of *C. ariakensis*. It has been suggested that in the absence of action by the government to introduce *C. ariakensis* the likelihood of this type of “hooliganism” would increase. To deter any such attempt, attention should be drawn to the devastating impact of the oyster parasite *Haplosporidium nelsoni* (MSX), which entered the Bay through illegal introductions of the non-native oyster *Crassostrea gigas*.

- Upon completion of the studies called for in the NAS review, the re-convening by the Chesapeake Research Consortium of the group of Chesapeake Bay oyster scientists who produced the consensus document for oyster restoration in 1999 for the purpose of evaluating and updating that document to reflect all new information. Specific consensus should be sought on the issue of introducing *C. ariakensis* to the Bay.
- Continued funding commitment by federal, state and private partners to restoration and stocking of oyster reefs in order to meet the C2K goal of a 10-fold increase in native oysters by 2010.

ISSUE BACKGROUND AND CONTEXT

The potential economic and ecological benefits associated with an oyster that grows faster and survives better than the native Chesapeake Bay oyster, *C. virginica*, are great. But these potential benefits must be balanced with the potential adverse implications for the Bay and the entire coast that come with an introduction of a non-native species. * Unfortunately, the scientific information currently available is insufficient to make this judgment and support a responsible public policy decision on this issue. For example, most scientists and managers agree that a large-scale aquaculture industry based on sterilized (triploid) *C. ariakensis* would ultimately lead to the establishment of potentially reproductive (diploid) oysters in the wild. Factors not subject to human control, such as accidental loss caused by storms, coupled with the known tendency to revert to a reproductive (diploid) state, all but assure this scenario. Scientists and managers cannot, with any degree of certainty, predict what effect reproductive populations of *C. ariakensis* might have on (1) the native oyster, (2) the Bay's food web, or (3) other species in the Bay. In fact, very little is known about the life history of this oyster even in its native range. More importantly, the scarcity of information currently available for *C. ariakensis* makes it difficult to determine the geographic range potentially affected by this species. Almost certainly, however, it would not be restricted to the Chesapeake Bay.

In addition, restoration of *C. virginica* (the Bay's native oyster) at a scale that can be expected to yield detectable results has only just begun. While interest in restoring native oysters to Chesapeake Bay has been high for at least a decade, only in 1999 did a scientific consensus emerge on how to conduct full-scale *C. virginica* restoration. Subsequently, substantial public and private resources have been committed to a broad-based restoration plan, the first phase of which is expected to take ten years. Based on the results of the early stages of this long-term effort, there is considerable optimism that the native oyster can be restored to Chesapeake Bay, providing both economic and ecological benefits.

The history of non-native introductions into marine systems reveals a prospect that is unpredictable and probably irreversible. Given the promise shown by native oyster restoration efforts, it is too early in the Bay-wide effort to restore *C. virginica* to contemplate shifting the public focus to an alternative with completely unknown consequences. Nevertheless, CBF recognizes the possibility that with additional information for making well-informed decisions, *C. ariakensis* could at some point in the future be considered as a tool for reinvigorating the oyster industry and potentially for restoring certain ecosystem functions. In the near term, emphasis should be put on low risk, collaborative programs for filling identified information gaps. Only then can the Chesapeake Bay community, in proper consultation with other Atlantic coast interests, make an informed and responsible decision about the use of *C. ariakensis* in tidal waters.

Carlton, J. T. 2001. Introduced Species in U.S. Coastal Waters: Environmental Impacts and Management Priorities. Pew Oceans Commission, Arlington, VA.