Record of Decision

Final Programmatic Environmental Impact Statement for
Oyster Restoration in Chesapeake Bay
Including the Use of a Native and/or Nonnative Oyster

I have reviewed the Final Programmatic Environmental Impact Statement (PEIS), as well as the correspondence received in response to coordination of this document. Based on the conclusions of the PEIS, the reviews of other Federal, State, and local agencies, input from the public, and the review of my staff, I find the plan identified as the Preferred Alternative in the PEIS to be in the public interest and in accordance with environmental statutes.

The Norfolk District of the U.S. Army Corps of Engineers, the Maryland Department of Natural Resources, and the Virginia Marine Resources Commission (known collectively as the lead agencies) completed the PEIS which presents information regarding a variety of strategies for attempting to restore the population of oysters throughout Chesapeake Bay in Virginia and Maryland. The proposed action that prompted the preparation of this PEIS was to introduce a nonnative species, the Suminoe oyster, and continue efforts to restore the native Eastern oyster.

The Executive Committee, which comprised senior representatives of each of the lead agencies, carefully reviewed the summaries of projected outcomes and evaluated the benefits and risks associated with the proposed action and each of the alternatives for each of the decision criteria. Each of the lead agencies conducted its review from its own management perspective. The Norfolk District took the lead in developing consensus for a preferred alternative among the lead agencies through development and application of a decision-making framework and a series of meetings and conference calls. Applying that decision-making process and accounting for science, public comments, observations, and professional judgment resulted in ranking the assessment category of Environment and Ecological as the highest priority, and the category of Social Effects as the lowest priority. Ecosystem effects were ranked the most important of the specific decision criteria, and visual and aesthetic effects were ranked the least important. Implementation of these decision-making tools resulted in ranking Alternative 8a highest in three of the four priority categories. Alternative 8b was ranked highest in the Economic category.

The Norfolk District acknowledged considerable uncertainty regarding the likelihood that Alternative 8a will result in establishing a sustainable, Bay-wide oyster population and the possibility that the Bay-wide population of Eastern oysters will continue to decline in the future; however, the District considered Alternative 8a to be a conservative choice because of the ecological uncertainties associated with implementing Alternative 8c and the strong opposition of most stakeholders to that alternative. The Norfolk District considered ecological uncertainties associated with Alternative 8b to be somewhat less than those associated with Alternative 8c, but those uncertainties could not be resolved with the data and information available for preparing the PEIS. The State of Maryland emphasized that not all strategies for native oyster restoration

have yet been exhausted and that past native oyster restoration efforts were limited in scope (i.e., scale, lacked an ecological focus, and precluded a regional, large-scale response). Maryland favored a "zero-risk" policy regarding the Suminoe oyster based upon the precautionary principle, the potential for significant negative ecological consequences, and the irreversible nature of an introduction of the species, whether intended or unintended.

After considering all available information and the input of all stakeholders, the lead agencies have concluded that **Alternative 8a** is the preferred approach for restoring the Chesapeake Bay oyster population, using a combination of alternatives that involves only the native Eastern oyster (*Crassostrea virginica*). The Preferred Alternative is also identified as the environmentally preferable alternative which is defined as "the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (Forty Most Asked Questions Concerning Council on Environmental Quality's National Environmental Policy Act Regulations, 1981). The Preferred Alternative 8a consists of the following elements:

Alternative 2 (Enhanced Native Oyster Restoration) - Expand, improve, and accelerate Maryland's oyster restoration and repletion programs, and Virginia's oyster restoration program in collaboration with Federal and private partners. This work would include but would not be limited to an assessment of cultch limitations and long-term solutions for this problem and the development, production, and deployment of large quantities of disease resistant strain(s) of C. *virginica* (Eastern oyster) for brood stock enhancement. Enhanced restoration activities to be implemented in the future may differ substantially from the traditional restoration programs previously conducted in both states. Although the kinds of future restoration activity may differ from those evaluated in some detail in the Final PEIS, the level of activity will be substantially greater than past levels.

As presented in Final PEIS, this alternative includes roughly doubling the number of acres of habitat to be rehabilitated over a 10-year period and increasing the number of seed oysters to be planted by a factor of 4.5 over 10 years. Initial evaluations lead to the conclusion that using disease-resistant strains of the native oyster developed in hatcheries to restore wild oyster populations is inadvisable; consequently, that element of the alternative was not considered in further analysis for the Draft PEIS. Numerous stakeholders who commented on the draft suggested an approach known as "revolving brood stock" hatchery production in which wild oysters taken from areas in which disease resistance appears to be developing are used as brood stock in the hatchery. The brood stock would be replaced each year with new brood stock from those locations. Analyses for Alternative 2 assume the use of offspring of the brood stock of wild Eastern oysters spawned in hatcheries each year in Maryland and Virginia. Under Alternative 2, most spat would be planted on sanctuary bars.

Alternative 3 (Harvest Moratorium) – Implement a temporary harvest moratorium on native oysters and an oyster industry compensation (buy-out) program in Maryland and Virginia or a program under which displaced oystermen are offered on-water work in a restoration program. In lieu of a total moratorium, the lead agencies envision implementing more restrictive oyster harvesting management regimes (e.g., annual harvest quotas; closed and open harvesting

areas) that would be biologically and economically sustainable, that would include accountability measures, and that would minimize the effects of harvest on the potential development of disease resistance.

Alternative 4 (Expansion of Native Oyster Aquaculture) - Establish and/or expand State-assisted, managed or regulated aquaculture operations in Maryland and Virginia using the native oyster species. Both states may expand technical aquaculture support programs, particularly in the training of watermen who may be interested in transitioning from wild harvest to aquaculture. State expenditures to support aquaculture expansion may increase in the future and, thus, may be greater than those considered in the PEIS.

As part of the Preferred Alternative, the Corps, together with the cooperating Federal agencies, the State of Maryland, the Commonwealth of Virginia, and PRFC will pursue the establishment of realistic metrics, accountability measures, and a performance-based adaptive management protocol for all efforts to revitalize the native oyster for purposes of achieving commercial and ecological goals.

In addition to the Preferred Alternative, the PEIS evaluated four additional alternatives, and combinations thereof, that represent a variety of distinct strategies for attempting to restore oysters in Chesapeake Bay. The alternatives represent the major approaches being advocated by different agencies or stakeholders in Chesapeake Bay oyster restoration. The other alternatives considered included:

Alternative 1: No Action- Not taking the proposed action: Continue Maryland's present oyster restoration and repletion programs, and Virginia's oyster restoration program under current program and resource management policies and available funding using the best available restoration strategies and stock assessment techniques.

Alternative 5: Aquaculture - Establish State-assisted, managed or regulated aquaculture operations in Maryland and Virginia using suitable triploid, nonnative oyster species.

Alternative 6: Introduce and propagate in the State sponsored, managed or regulated oyster restoration programs in Maryland and Virginia, a disease resistant oyster species other than *C. ariakensis*, or an alternative strain of *C. ariakensis*, from waters outside the United States in accordance with the International Council for the Exploration of the Sea (ICES) 1994 Code of Practices on the Introductions and Transfers of Marine Organisms.

Alternative 7: Introduce the Suminoe Oyster and Discontinue Efforts to Restore the Eastern Oyster - Introduce the oyster species, *C. ariakensis*, into the tidal waters of Maryland and Virginia for the purpose of establishing a naturalized, reproducing, and self-sustaining population of this oyster species.

The original stand alone alternatives (1 through 7) were initially all evaluated equally along with the Proposed Action, and an eighth alternative was identified simply as "a combination of alternatives." Later in the NEPA process, the "combination of alternatives" was more specifically identified to form Alternatives 8a, 8b, and 8c. The eventual Preferred

Alternative, 8a, consists of a combination of Alternatives 2, 3, and 4. The other combinations, 8b, and 8c are described as follows:

Alternative 8: Combination of Alternatives

- ***Combination 8b*** – Eastern oyster and triploid Suminoe oysters
  - Alternative 2: Enhance efforts to restore Eastern oysters
  - Alternative 3: Impose a temporary harvest moratorium and a compensation program for the oyster industries
  - Alternative 4: Cultivate Eastern oysters
  - Alternative 5: Cultivate triploid Suminoe oysters

- ***Combination 8c*** – Eastern oyster and both diploid and triploid Suminoe oysters.
  - Alternative 2: Enhance efforts to restore native oysters
  - Alternative 3: Impose a temporary harvest moratorium and a compensation program for the oyster industries
  - Alternative 4: Cultivate Eastern oysters
  - Alternative 5: Cultivate triploid Suminoe oysters

Based on the current state of the science and extensive public discourse, the lead agencies concluded that the use of nonnative oysters in Chesapeake Bay, its tidal tributaries, and the coastal bays and waters of Maryland and Virginia poses unacceptable ecological risks. Therefore, the Preferred Alternative established by the lead agencies, and presented in the PEIS, is Alternative 8a.

I have reviewed and evaluated documents concerning the Preferred Alternative, views of other interested agencies and the general public and responded to comments containing those views, and have examined the various practicable means to avoid and/or minimize environmental harm from the implementation of the Preferred Alternative. All practicable means to avoid or minimize adverse environmental effects have been incorporated into the recommended plan. The public interest will best be served by implementing the oyster restoration plan identified and described in the Final PEIS. This Record of Decision completes the National Environmental Policy Act process.

ANDREW W. BACKUS
Colonel, Corps of Engineers
Commanding

13 AUGUST 2009
DATE