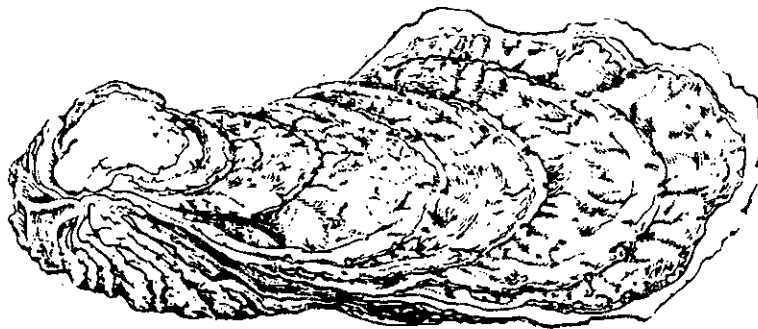


**MARYLAND
OYSTER
ROUNDTABLE
ACTION
PLAN**



DECEMBER 1993



Maryland Oyster Roundtable

Action Plan

I. PREFACE

In the summer of 1993 the State of Maryland convened the Oyster Roundtable to address major concerns about how to bring oyster stocks in Maryland's Chesapeake Bay back to economically and ecologically healthy levels. The Department of Natural Resources felt that it is time to bring all interested parties together because the oyster parasites MSX and Dermo, habitat losses, inadequate water quality, effects of harvesting and other factors have had significant impacts, for example approximately 80% of the public oyster bars in Maryland waters are unharvestable.

The 40 members of the Roundtable represent those interested in Maryland's oyster management. The Roundtable's members include fishermen, aquaculturists, environmentalists, legislators, scientists and senior staff from the Maryland Departments of Natural Resources (DNR), Agriculture, and Environment, and the Governor's office.

The goal of the Roundtable has been to develop sound, broadly supported recommendations on how to revive oyster populations in Chesapeake Bay.

More specifically, the objectives are to:

- Maximize and enhance the ecological benefits of oysters
- Maximize and enhance the economic benefits derived from harvesting in the public and private oyster fisheries

Dr. Tom Hopkins Maryland Aquaculture Association	Pete Jensen Maryland Dept. of Natural Resources
Del. Samuel Q. Johnson, III Maryland House of Delegates	Dr. Steve Jordan Maryland Dept. of Natural Resources
Dr. Vic Kennedy University of Maryland	Fred Maddox Waterman
Cecily Majerus Maryland Executive Department	Dr. Paul Massicot Maryland Dept. of Natural Resources
Dr. Don Meritt University of Maryland	Dr. Roger Newell University of Maryland
Dr. Ken Paynter University of Maryland	Jim Peck Maryland Dept. of Natural Resources
Richard Pelz Aquaculturist	Del. Marsha Perry Maryland House of Delegates
Brad Powers Maryland Dept. of Agriculture	Billy Rice Waterman
Dr. Brian Rothschild University of Maryland	Jackie Russell Waterman
Sam Shriver Aquaculturist	Larry Simns Maryland Watermen's Association
Del. John F. Slade, III Maryland House of Delegates	Sen. J. Lowell Stoltzfus Senate of Maryland
Dr. Ivar Strand University of Maryland	Sen. Gerald Winegrad Senate of Maryland
Dr. M. Gordon Wolman Johns Hopkins University	Bill Woodfield Seafood Industry

The second section describes one specific intensive cooperative management program. Due to the dominating impact of MSX and Dermo on Chesapeake oyster stocks, recommendations are made regarding the designation of geographic areas, termed "Oyster Recovery Areas" ('ORA') in which efforts would be concentrated to:

- 1) limit transplantation activities which would serve to perpetuate MSX and Dermo in a region.
- 2) evaluate different methods to rehabilitate, rebuild, plant and otherwise restore oyster populations in these areas. Areas should initially be selected in the lower salinity reaches of the Bay and its tributaries, where MSX and Dermo are apparently less viable.

Some of the intensified efforts to be conducted in these Oyster Recovery Areas actions are discussed in section B below.

A. ACTIONS THAT APPLY THROUGHOUT MARYLAND'S PORTION OF THE BAY

1. MSX and Dermo

a. Monitor the prevalence and intensity of MSX and Dermo in the Bay

Recommended Action Items:

1. Continue an enhanced annual disease survey

b. DNR management programs should minimize the possibility of spreading MSX and Dermo through the repletion program

Rationale: It is agreed that the state repletion program should continue for the time being, even though this may result in the movement of material that harbors MSX and Dermo, either in the seed oysters themselves or in other organisms in the cultch. However, since it is important to minimize the movement of MSX and Dermo, as soon as enough seed which can be certified

planting as determined by current technology.¹

Recommended Action Item:

1. Develop such criteria and rationale for certifying oysters. These criteria should be at the lowest detection levels using currently available thioglycolate assays and histological analysis.

e. Conduct an environmental impact assessment of the introduction of non-native species of oysters as a contingency

Rationale: The recommendations contained in this document constitute major actions to overcome the impacts of MSX and Dermo. However, the possibility exists that they might not lead to the objectives of the Roundtable being satisfactorily achieved within an acceptable time period. That being the case, it is prudent to evaluate contingency measures which could be instituted if desirable. One possibility is to consider introducing another species of oyster IF this would result in a net benefit AND there would not be other adverse effects on the ecology of Chesapeake Bay.

Recommended Action Items:

1. Conduct an environmental impact assessment of the potential introduction of non-native species of oyster into Maryland's portion of the Chesapeake Bay, including consideration of issues specified by the Oyster Roundtable. Alternatives considered shall include further restrictions on harvest for a specified length of time (e.g. five years) prior to introducing a non-native species of oyster.

¹Hereafter in this document, the terms "certified seed" or "certified oyster" mean seed oysters or oysters having zero prevalence and intensity of MSX and Dermo (as well as any other pathogen which is found to significantly impact the oyster) at time of planting as determined by current technology.

Recommended Action Items:

1. Current programs, such as those established under the Chesapeake Bay Program, should maintain or increase the emphasis on reducing pollutant sources that produce poor water quality which adversely affects oyster stocks.
2. Programs to improve water quality, such as the Chesapeake Bay Program's Tributaries Strategy, should incorporate specific measures oriented at protecting oyster stocks from adverse water quality.
3. Local, state, and federal agencies should utilize their permitting and environmental review programs to ensure that oyster habitat is not adversely affected by the discharge of pollutants, dredging, and other human activities.
4. The ORA advisory committees should assess the potential impact of activities which may cause water quality adverse to oysters in ORAs and provide recommendations to the appropriate agencies for prevention and restoration.

3. Increase Production/Management

a. Increase the hatchery production of oyster larvae and seed oysters

Rationale: Current levels of production of certified oyster larvae and seed oysters will not meet the needs of stocking the ORA's and providing for private aquaculture and community association projects

Recommended Action Items:

1. Maximize the production of the current Horn Point hatchery
2. Consider establishing one or more additional state production oyster hatcheries, for example at the Deal Island and/or Piney Point facilities, possibly in conjunction with the NPCV discussed in Section III.B.1.a. below.
3. Establish remote setting sites for setting eyed-larvae purchased from public or private hatcheries, in appropriate locations with low levels of MSX and Dermo.

planted and seeded areas

d. Provide for fresh shell to be used by the state hatchery and for community groups for ecological enhancement

Recommended Action Items:

1. Provide fresh shell to the hatchery efforts on a priority basis
2. Develop a policy on minimum desiccation period to prevent spread of MSX and Dermo with fresh shell.
3. Provide access to fresh shell to community groups for ecological enhancement

e. Evaluate the potential advantages and disadvantages of a 'slot limit' with a minimum size for harvesting of 2.5" and a maximum size of 4"

Rationale: Lowering the minimum size to 2.5" would provide for a harvest before the oysters succumb to disease. The 4" maximum size would protect larger oysters which have demonstrated a potentially greater resistance to MSX and Dermo by surviving to that size. At present there are questions about these issues that need to be explored before instituting a slot limit, such as the impact of a 2.5" minimum size on spawning stocks and the availability of a market for smaller oysters.

Recommended Action Items:

1. Evaluate the impacts of a 2.5" - 4" slot limit on oyster populations, including the possibility that a 2.5" minimum expands the potential acreage for seed planting to support harvest
2. Evaluate the market potential for the smaller oysters

established for finfish aquaculture by DNR in consultation with the Environmental Matters Committee)

2. The pilot permitting program will include the following aspects:

- A five-year duration for the permits, subject to review and renewal
- A limit of 20 permits, unless this limit is subsequently amended as a recommendation of the Oyster Roundtable
- Permits are limited to 5 acres per individual; however, two or more persons may join together on a single permit which may not exceed 10 acres
- The total area covered under a single permit may include more than one location
- Permittees shall annually prepare and submit to DNR a report summarizing their activities on the permit area, including information on what restoration activities were undertaken, the production techniques utilized, and amount of oysters planted and harvested
- If a permittee fails to submit the annual report mentioned above, or if the report indicates that no activities were undertaken under the permit, DNR may revoke the permit
- The purpose of the projects permitted will be to demonstrate feasibility of various oyster production techniques. The data collected will be incorporated into the public education program described below

b. DNR should establish an aquaculture permit clearinghouse service for applicants

Rationale: Applicants for oyster aquaculture projects must comply with a number of regulatory requirements. To help meet the objectives of the Roundtable with regard to private oyster harvesting, DNR can provide assistance to applicants.

Recommended Action Items:

1. DNR should designate a single point of contact for questions related to the regulatory requirements for aquaculture and how a potential applicant should

5. Research

a. DNR and the University of Maryland, in conjunction with other state and Federal agencies, academic institutions and private research organization, should initiate a multi-year, stably funded, goal-oriented research program on topics which will lead to the ability to detect, prevent and control MSX and Dermo

Rationale: Until we know considerably more about MSX and Dermo, the ways they affect oysters, and the oyster's lack of defenses against them, management efforts to restore the economic and ecological benefits of oysters to the Bay will be significantly hampered. Such a program must be multi-year in nature in order to provide substantial results. Furthermore, in order to provide a sufficiently high likelihood that such a program will succeed, stable and carefully targeted funding must be provided over a multi-year period.

The research and management programs related to oyster diseases will be critically evaluated after five years to determine the effectiveness in reversing declines in oyster populations and progress in scientific understanding leading to the control of MSX and Dermo. At that point, decisions will be made whether to: 1) continue or enhance the research program because it is providing answers that are contributing to restoration of the eastern oyster; 2) reduce the priority of disease research because it does not show prospects for contributing to oyster restoration; or, 3) refocus the program on a new or revised set of specific problems and questions.

Recommended Action Items:

1. Initiate the first five-year phase of a multi-year research program aimed at improving our ability to detect, prevent and control MSX and Dermo. Include topics such as the following:
 - Improve methods for detection of MSX and Dermo, especially in early life stages of oysters
 - Understand the life cycle of MSX and Dermo, including their environmental requirements and identification of alternate hosts
 - Identify existing information and intensify research regarding the physiological aspects of MSX and Dermo, including immune system function, which ultimately lead to the death of the oyster

restoration of naturally reproducing populations of oysters.

- Determining the best methods for rebuilding a natural oyster population
- Preparing and rehabilitating natural bars to maximize natural set
- Determining the best methods to plant and maintain productive oyster beds
- Planting certified seed on natural bars and prepared bottom
- Determining oyster production techniques to be evaluated, including movement of oysters among different salinity zones
- Comparing the productivity and economic feasibility of leased bottom, water column-utilizing and floating tray culture systems with both hatchery reared and naturally set seed
- Determining methods to improve enforcement
- Implementing methods to maximize the opportunities for watermen to participate in management activities such as planting and monitoring, as well as participation in private culture and public harvesting where those activities are appropriate in the ORA
- Evaluating areas of bottom to be made available for leasing, outside of Zone A's
- Determining areas to be set aside as sanctuaries for ecological purposes
- Identifying water quality problems that could affect the health of oysters
- Encouraging the establishment of a non-profit co-venture (NPCV) of commercial fishermen, aquaculture and environmental interests which may conduct activities in the ORA, such as those listed above, with approval of DNR. This organization will be authorized to raise funds from state, federal and private sources and to execute contracts, including multi-year contracts.

In its implementation of activities within each Oyster Recovery Area, DNR will be guided by an advisory committee. Each ORA advisory committee will be

after 1, 2 and 3 years of growout at low salinity. Parallel growout experiments would be conducted in the immediate area using the water column and floating raft culture. Permits for these projects should be obtained under the pilot aquaculture permitting program described in Section III.A.4.a. above.

3. Natural bars within the areas will be rehabilitated to maximize the chances of natural set.

4. A portion of the plantings will be permanently set aside for ecological/brood stock sanctuaries.

5. Only certified seed may be brought into this zone.

6. Intensive monitoring for MSX and Dermo would be conducted.

b. Zone B - This would be the zone immediately downstream of Zone A or, it could be established separately in a river without a Zone A. In it, shellfish harvesting would still be allowed, but only certified seed could be planted. Again, a variety of pilot and demonstration projects would be undertaken.

Recommended Action Items:

1. Shellfish harvesting will be allowed, consistent with management objectives

2. Only certified seed may be brought into this zone

3. Experimental seeding with certified seed will be carried out

4. Natural bars will be rehabilitated.

5. Intensive monitoring for MSX and Dermo will be conducted.

c. Zone C - In a large zone generally downstream from Zone B, shellfish harvesting would be allowed, consistent with management objectives, and natural seed could be imported until it could be replaced by certified seed, with the ultimate objective of a whole tributary or other large, autonomous zone free of any planting of natural seed. Some experimental seeding would occur in these areas and some natural bars within the areas would also be rehabilitated to maximize the chances of new set. In addition, intensive monitoring for MSX and Dermo would occur within Zone C. Within Zone C, one or more

b. Chester and Choptank Rivers

Rationale: The ORA's in the Chester and Choptank Rivers are designed to test the 'quarantine' concept discussed above and should be large enough to accomplish this purpose. Although it is currently unknown how low the levels of MSX and Dermo can be reduced, there is evidence to support the belief that in order for the program to have a chance at succeeding, the proposed restoration efforts must be isolated from oysters which are infected by MSX and Dermo. In addition, at least some of the selected areas should have the potential for average natural spatfall over the initial five-year management period. This is not necessary for all areas because some management techniques employing certified seed oysters will be tested. Finally, the areas must have a demonstrated potential for growing oysters to market size and must span a range of salinities.

The initial ORA's described below in the Chester and Choptank Rivers are located in two of the most important producing areas for the commercial oyster fishery. Delineation of the size of the areas represents a compromise between the criteria described in the preceding paragraph, which some believe would have led to the designation of very large areas, and concerns of the watermen over the effects which the designation of large areas would have on an already diminished harvest area, especially in view of the potential lack of funds to obtain large quantities of certified seed oysters. Although our present understanding of MSX and Dermo suggests that the 'experimental' areas in Zone A are far enough away from areas where MSX and Dermo currently occur, we cannot be sure that this is the case. Nonetheless, designation of these areas represents a significant first step. Review of results from the initial areas will allow the expansion of the ORA's if desirable at a time appropriate to meeting management objectives.

It should be noted that the rationales for establishing these two ORA's are different. In the Chester the purpose is to plant certified seed to revitalize a fishery. In the Choptank the purpose is to restore naturally-reproducing populations of oysters.

Recommended Action Items:

1. No additional oyster leasing or raft culture will occur in either the Chester or Choptank ORA'S under this program; whereas, leasing or raft culture will be encouraged in other ORA's.
2. The following Oyster Recovery Area is initially identified in the Upper Chester River. Prior to the Chester River ORA being finalized, the

Zone C: Downstream from the lower boundary of Zone B to the mouth of the Choptank River.

4. Designation of Additional Oyster Recovery Areas

a. Other ORA's should be designated as appropriate

Recommended Action Items:

1. The Oyster Roundtable should review the progress of activities in the initial Oyster Recovery Areas and other relevant information and recommend the designation of additional Oyster Recovery Areas if so warranted, with a long-range objective of restoring and rebuilding all natural bars.

IV. IMPLEMENTATION STRATEGY

A. CONTINUATION OF THE ROUNDTABLE

The Oyster Roundtable will continue to meet periodically, at the call of the Steering Committee or at the written request of more than 50% of the Roundtable members. A new Steering Committee will be established to monitor progress in implementing these recommendations and to coordinate efforts to improve implementation. The Steering Committee may also form work groups to pursue particular issues. Staff support will be provided by DNR with the assistance of other state agencies. Members of the Steering Committee will represent the cross-section of interested parties currently on the Roundtable including commercial fishermen, aquaculture interests, environmentalists, scientists and the State Departments of Natural Resources, Environment and Agriculture. The Steering Committee will oversee preparation of a report every

C. COMMITMENT

The Roundtable agreed to operate by consensus. Therefore, only those recommendations that all Roundtable members could live with were included.

The program outlined here is considered to constitute only the first phase of a long-range program. Additional actions should be considered in the future pending results of the initial recommendations.

The Roundtable conducted its discussions in an open, candid and constructive manner. Wide ranges of opinions were presented. Disagreements were voiced and debated, sometimes intensely. A wide range of possible actions was considered, including all proposals which were advanced by any member of the Roundtable. Consequently, the members agree that their views received a fair hearing, even if they were not ultimately adopted.

Under these circumstances, the members of the Roundtable agree that the recommendations outlined above constitute the best initial program to meet the Roundtable's objectives.

These recommendations are bold, comprehensive, and potentially controversial. They are expected to arouse significant interest and discussion among the public. In order for the public discussion about these recommendations to be informed, and to enhance the likelihood that the recommendations will be implemented, it is imperative that the members of the Roundtable actively participate in informing the public about the recommendations and encouraging their adoption.

----- Agreement -----

The undersigned agree to commit themselves to a sustained, cooperative effort to ensure that the recommendations of the Roundtable are implemented. Specifically, each party whose signature appears below agrees to:

- Support implementation of the recommendations herein
- Explain the recommendations to all constituents and encourage their support

<u>Will Baker</u>	<u>Donald Boesch</u>	<u>Torrey C. Brown</u>
<u>Tucker Brown</u>	<u>Michelle Cummins</u>	<u>Peter DeFur</u>
<u>Russell Dize</u>	<u>Mike Eckhart</u>	<u>Sen. Bernie Fowler</u>
<u>Bill Goldsborough</u>	<u>Del. Ronald Guns</u>	<u>Mike Haire</u>
<u>Buddy Harrison</u>	<u>Verna Harrison</u>	<u>Tom Hopkins</u>
<u>Pete Jensen</u>	<u>Del. Q. Johnson</u>	<u>Steve Jordan</u>
<u>Vic Kennedy</u>	<u>Fred Maddox</u>	<u>Cecily Majerus</u>
<u>Paul Massicot</u>	<u>Don Meritt</u>	<u>Roger Newell</u>
<u>Ken Paynter</u>	<u>Jim Peck</u>	<u>Richard Pelz</u>
<u>Del. Marsha Perry</u>	<u>Brad Powers</u>	<u>Billy Rice</u>
<u>Brian Rothschild</u>	<u>Jackie Russell</u>	<u>Sam Shriver</u>
<u>Larry Simns</u>	<u>Del. John Slade</u>	<u>Sen. L. Stolfus</u>
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<u>Bill Woodfield</u>		