



Procedures for the Relaying of Eastern Oysters and Clams from a Shellfish Lease for the Purpose of Natural Cleansing Prior to Commercial Harvest

What You Need to Know

Background

Research and experience has demonstrated that when shellfish are transplanted from polluted to clean environments they will naturally attenuate accumulated indicator bacteria and associated pathogens over a period of time if environmental conditions are favorable for active filtering and feeding. The National Shellfish Sanitation Program (NSSP), Model Ordinance, under which shellfish regulatory programs are operated in the United States, requires that the cleansing period be continuous.

A review of available research/literature on oyster biology suggests that no filtering occurs below 3 ppt (parts per thousand) salinity or below a temperature of 5°C (~41°F). Modest filtering activity is not encountered until the salinity is above 5 ppt and the temperature exceeds 10°C (~50°F). Ideal temperature conditions occur between 14°C and 28°C (57°F and 82°F). Temperatures above 34°C (~93°F) result in distressed conditions and reduced pumping rates. In order to provide reasonable assurance that adequate filtering activity is occurring, the minimum environmental conditions associated with modest activity are considered essential. Therefore, Maryland Department of Environment (MDE) has determined that the conditions associated with modest filtering (5 ppt and 10°C) will be the minimum environmental conditions necessary to authorize an oyster relay. Likewise, a maximum temperature of 34°C shall be the upper threshold for continuing or approving a relay period.

Research shows that the optimal conditions for clams are similar to those for oysters. The literature does show that purge rates can differ among clam species depending on temperature. Despite the fact that there is little research done to show the effectiveness of relay (natural cleansing) of clams, a 14-day relay period when temperatures are above 10°C (~50°F) would also be effective for clam relay, since depuration (land-based controlled recirculation) studies show clearance rates within three days for most clam species at temperatures above 10°C.

The conditions described above apply to shellfish from both submerged land and water column leases.

Basic Requirements and Scope

These procedures are established for the purpose of relaying shellfish intended for commercial sale from a restricted area to an approved or conditionally approved area, where the leaseholder has:

- A) Valid shellfish leases from the Maryland Department of Natural Resources (DNR), both the restricted lease that oysters will be harvested from and the lease in approved waters or conditionally approved waters where the shellfish will be transplanted. A leaseholder may obtain written permission from a leaseholder to use a lease in approved or conditionally approved waters for relay;



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- B) A valid Shellfish Aquaculture Harvester Permit issued by DNR;
- C) Requested in writing and received permission from MDE for the relay operation. MDE will establish that the relay site has the required water quality, salinity and temperature conditions required for natural cleansing;
- D) Complied with all the terms and conditions set forth in these permits, licenses, and approvals.

Responsibilities of the Applicant Requesting Permission to Relay

1. A written request to MDE where the letter of application includes:
 - a. Name, address and phone number of the leaseholder requesting permission to relay shellstock and shellfish lease number for the shellfish lease the product will come from.
 - b. DNR shellfish lease number for the shellfish lease from which the shellstock will be relayed to.
 - c. The approximate number of bushels to be relayed and the approximate number of days required to complete the relay.
 - d. The type of gear to be used to harvest the shellstock to be relayed and/or the type and size of container(s) in which the shellstock will be transported. Note: the appropriate water column lease authorization is required to utilize containers.
 - e. The manner by which the lease holder will keep separate the lots of shellfish relayed.
 - f. A copy of the permission letter from the leaseholder of the lease to which the shellstock will be relayed if applicant is not the leaseholder.
2. Once the applicant receives permission from MDE to conduct the relay, the applicant must contact DNR or MDH to coordinate oversight of the relay operation. Contact information will be included in the letter from MDE. If transport of relayed product is by vessel over water the applicant must contact DNR Fishing and Boating Services who will communicate with the DNR Natural Resources Police (NRP) to coordinate staff and officers to oversee the relay operation, respond to the area for law enforcement issues and patrol the area. If transport of relay product is over land, the applicant must contact MDH to schedule oversight of transporting product to the relay site.

Specific Conditions and Procedures Required for Relay of Farm-Raised Oysters

Relay operations are permissible under Maryland Code Annotated, Natural Resources Article § 4-1006, and COMAR 08.02.04.03 provided that the following conditions, procedures, and requirements are met before, during and after the relay operation. No person shall engage in relay operations without first obtaining permission from MDE.



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1. Relay operations are only permitted during the closed season for natural oyster bar harvest and may be modified by the DNR.
2. All shellfish leases shall be marked in accordance with Natural Resources Article §4-11A-10 and COMAR 08.02.23.03. Markers shall be maintained at a minimum of four corners of the lease to include the leaseholder's shellfish lease number and the leaseholders name or initials
3. The entire relay operation is to be carried out under the supervision of a State Shellfish Control Authority agency, either DNR or MDH. MDH will oversee removal and overland transport by vehicle from the restricted area to the approved transplant site. DNR will oversee removal and transportation by vessel over water. NRP will patrol the receiving transplant area.
4. Before any shellfish are moved and during the relay operation, the approved leased area to which the shellfish are being moved, shall be conspicuously marked by yellow flags attached to fixed buoys or stakes. The waters in the relay area shall be considered restricted and closed due to pollution, within the meaning of Section 4-1006 of the Natural Resources Article, Annotated Code of Maryland while the yellow flags are in place.
5. All vessels or vehicles involved in the transportation of shellfish during the relay must fly a yellow flag from a prominent place throughout the entire operation.
6. The yellow flags specified in Item 4 and 5 will be provided and maintained by the individual requesting permission to relay. The flags must measure at least 1.5 by 1.5 feet.
7. All shellfish relayed to a submerged land lease shall be placed on bottom and remain untouched on the bottom for the entire duration of the relay operation. DNR shall record the quantity of shellfish and provide this record to the lease holder at the relay site.
8. All relayed shellfish relayed to a water column lease shall be placed in bags, cages or floats. The gear used for relay shall be open to the free flow of water. Containers that are fouled must be cleaned to allow the free flow of water before placement at the relay site. Upon removal from the water at the restricted lease, the containers will be sealed to prevent tampering during the relay period, counted and moved to the relay site. MDH or DNR shall record the count and provide this record to the lease holder at the relay site. All containers shall be marked with the shellfish lease number of the site from which the shellfish were removed. The shellfish shall remain untouched and retained in their original containers for the entire duration of the relay operation.



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9. The leaseholder will assure lots of relayed product are kept separate from product already on the lease.
10. The 14-day relay period begins once the last shellfish is deposited at the transplant location. No other aquaculture activities are permitted in the flagged area during the relay period. For relay sites located in conditionally approved areas, the 14 days must be consecutive.
11. Consideration will be given and a determination made by MDE in consultation with DNR and MDH on a case by case basis if the lease is large enough for a buffer area and to allow harvesting activities on other sections of the lease. Consideration for harvest activities to continue on other sections of the lease will include: size of the lease, size of the section used for relay, hydrographic characteristics, and the ability for the Authority to assure no harvest from the marked restricted area of the lease.
12. MDE shall collect a representative shellfish sample at the end of the 14-day relay period for testing by MDH Laboratories Administration for bacteriological quality.
13. All relayed shellfish shall remain overboard in separate lots. Harvest is not permitted until the shellstock analysis is complete, found satisfactory, and written approval to remove the yellow flags is given by MDE. If applicable, DNR or MDH will remove the seals and record the number of containers. Once the flags are removed the area returns to its original classification of approved or conditionally approved and the product can be harvested in accordance with the classification.
14. When completing farm-raised shellfish tags or harvester/dealer tags associated with the harvest of the relayed product, the leaseholder should record the lease number of the approved lease where the oysters were deposited for cleansing and ultimately harvested for market.
15. The following reports shall be submitted to DNR at the frequencies stipulated below. The number of oysters harvested and moved during the relay should be reported on the monthly harvest report form for the lease that the oysters originated from with "RELAY" noted in the To Whom Sold column. After the relay period when the oysters are approved and harvested for sale, the amount harvested should be reported on the monthly harvest report of the approved relay lease. The relay activity should also be recorded on the Annual Usage Report form for both the restricted lease and the approved lease. Please contact the DNR Aquaculture and Industry Enhancement Division with questions related to monthly or annual reporting requirements.



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Contact Information

For more information about Maryland's shellfish safety call:

Maryland Department of the Environment
Water and Science Administration
Environmental Assessment and Standards Program (410) 537-3818
<https://mde.maryland.gov>