

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Division of Fish and Wildlife
Marine Fisheries



2010 Management Plan for the Shellfish Fishery Sector

Developed in association with the
commercial fishing licensing provisions set forth in the
“Rules and Regulations Governing the Management of Marine Fisheries”

December 8, 2009

These rules and regulations are promulgated pursuant to Chapter 42-17.1, Section 20-1-4, Section 20-2.1 and Public Laws Chapter 02-047, in accordance with Chapter 42-35 of the Rhode Island General Laws of 1956, as amended.

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STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

BUREAU OF NATURAL RESOURCES

FISH AND WILDLIFE &
LAW ENFORCEMENT

PURPOSE

The purpose of these rules and regulations is to manage the marine resources of Rhode Island.

AUTHORITY

These rules and regulations are promulgated pursuant to Chapter 42-17.1, Section 20-1-4, Section 20-2.1 and Public Laws Chapter 02-047, in accordance with Chapter 42-35 of the Rhode Island General Laws of 1956, as amended.

ADMINISTRATIVE FINDINGS

Rules and regulations are based upon the need to modify existing regulations (RIGL 20-3-2 through 20-3-6).

APPLICATION

The terms and provisions of these rules and regulations shall be liberally construed to permit the Department to effectuate the purposes of state law, goals, and policies.

DEFINITIONS

See Rhode Island Marine Statutes and Regulations, Part I, '1.3.

SEVERABILITY

If any provision of these Rules and Regulations, or the application thereof to any person or circumstances, is held invalid by a court of competent jurisdiction, the validity of the remainder of the Rules and Regulations shall not be affected thereby.

SUPERSEDED RULES AND REGULATIONS

On the effective date of these rules and regulations, all previous rules and regulations, and any policies regarding the administration and enforcement of this regulation shall be superseded. However, any enforcement action taken by, or application submitted to, the Department prior to the effective date of these Rules and Regulations shall be governed by the Rules and Regulations in effect at the time the enforcement action was taken, or application filed.

Management Plan for the Shellfish Fishery Sector

Quahog Endorsement

Commercial Landings: There are two very distinct peaks in commercial landings of quahogs in Rhode Island since 1947 (Figure 1). The first occurred in 1955 followed by a rapid decline until 1974 and then a second peak in 1985. The landings have since declined reaching their lowest levels in most recent years. In 2007, 1,425 metric tons (shell weight) were harvested, the lowest amount for the time series and only 12% of landings in 1985. The decline in landings since 1985 is due to several factors including the implementation of possession limits and seasons, reduction of fishable areas due to pollution closures, limited number of licenses available and reduction in the number of participants. According to the SAFIS reporting system, majority of the landings by count were harvested from Greenwich Bay, Conditional Areas A & B, and the West Passage of Narragansett Bay (Table 1). In 2007, 93% of the landings were from these areas. Most of the quahogs landed by count are littlenecks, followed by topnecks, chowders and cherrystones.

Resource Assessment: RIDFW conducts a stratified random survey of quahogs in Narragansett Bay on an annual basis, that commenced in 1993 (Ganz et al 1999). Both fished and unfished sections of the bay are sampled. The sampling consists of towing a small hydraulic dredge (0.36 meter sweep) for a distance of 30.5 meters at each station. Pressurized water is delivered to the dredge manifold which dislodges shellfish from the substrate. The dredge is designed to retain legal-sized quahaugs (> 25mm). All species retained in the dredge when hauled are identified and all shellfish are counted and measured. Based on the survey, the stratified mean density of quahogs in Narragansett Bay has been relatively stable since 1997 (Figure 2). Additional research is being conducted to improve the precision of the survey by relating observed quahaug densities to mapping of submerged sediments.

It is apparent that the availability of new commercial licenses in recent years has not caused a rise in landings, rather landings continue to decline with the lowest levels of the time series occurring in 2007.

Management Program: Quahogs are managed entirely within state waters by the Department of Environmental Management with advice from the Rhode Island Marine Fisheries Council. The Department, through the RIDFW, uses a set of management areas and a rotational transplant/harvest system to manage the resource. Permanent and conditional pollution closures restrict the fishery in addition to seasons, possession limits, and management closures.

Fishery Management Goals and Objectives:

Goal- The following goal is consistent with the objectives of the Rhode Island quahog management plan (Ganz et al. 1999).

Rhode Island will have a healthy bay quahog resource and a fishery management regime which provides for sustainable harvest, cooperative management by stakeholders, and appropriate opportunities for fishery participation.

Objectives-

1. Maintain fishing mortality rates and brood stock abundance at levels that minimize the risk of stock depletion and recruitment failure.
2. Conserve, enhance, and rebuild quahog resources in Narragansett Bay with appropriate management strategies including transplanting, area closures and spawner sanctuaries.
3. Maintain existing social and cultural characteristics of the fishery wherever possible.
4. Provide for cooperative management with industry and efficient operation, consistent with biological objectives.
5. Provide for adaptive management that is responsive to unanticipated short term events or circumstances.
6. Provide for a simple, uniform and enforceable set of regulations.

Fishery Management and Licensing Recommendations: In 2007, the Department issued 13 new quahog endorsements for the basic commercial fishing license. This decision was based on the Division assessment of license renewals, which indicated that 46 principal effort licenses issued in 2005 were not renewed in 2006. Due to uncertainty in the activity of the non-renewed licenses, an exit/entrance ratio of 3 to 1 was applied, resulting in the availability of the 13 new licenses. These licensees were restricted to 3 bushels per day statewide.

In 2008 the Department issued 499 principal effort licenses with quahog endorsements compared to 538 in 2007, a difference of 39 licenses. Principal effort license holders with quahog endorsements have access to full harvest levels. For student shellfish licenses there was a net decrease of 6 (60 in 2007; 54 in 2008) and a net increase of 24 over 65 shellfish licenses (136 in 2007; 160 in 2008). These two license categories are restricted to basic harvest levels.

In 2009 the Department issued 473 principal effort licenses with quahog endorsements, compared to 499 in 2008 (a decline of 26 licenses). Principal effort license holders with quahog endorsements have access to full harvest levels. For student shellfish licenses the number issued in 2009 was 54 (the same as 2008). Over 65 shellfish licenses increased from 160 in 2008 to 179 in 2009 (an increase of 19). These two license categories are restricted to basic harvest levels.

Based on the survey, landings and concerns over an ageing population of licensed quahog fishermen, issuance of new licenses or endorsements was permitted in past years on a conservative basis. The intention was to maintain current levels of effort by issuing a new license for every active license retired. Since the activity of licenses was unknown, a conservative exit/entrance ratio of 3 to 1 was used, as recommended by industry.

As specified in regulation, new entry will be allowed into the quahog fishery through the issuance of quahog endorsements according to priorities specified in section 6.7-6. New quahog endorsements will be made available using a 3:1 exit/entry ratio, as applied to all eligible licenses, Multipurpose License (MPLs) holders, and Principal Effort Licenses (PELs) with Quahog endorsements that retired in 2009. Since there were 48 such retirees, 16 new Quahog endorsements on Commercial Fishing Licenses (CFLs) will be available in 2010.

The provision set forth in section 6.7-4 (h) allowing an actively fishing basic commercial fishing license holder with a quahog endorsement to upgrade to a principal effort license with a quahog endorsement and an actively fishing student shellfish license holder to upgrade to a basic commercial fishing license with a quahog endorsement will be continued in 2010.

Future Management Considerations and Recommendations: DEM needs to continue work with industry to ensure a healthy quahog fishery consisting of resource sustainability and a licensing system that will maintain an active group of fishermen and facilitate entry of new participants.

Improvements in the landings data collection system along with RIDFW resource surveys will provide for innovations in management. Acquisition of fishery landings by market class and stratum will allow for stratum specific assessment and management. Fishery selectivity will be directly estimable and biological reference points can be refined to manage size composition in the harvest and spawning stock. In concert with transplanting and spawner sanctuaries, area specific regulation will be possible.

The Narragansett Bay Commission's combined sewer overflow project will potentially result in measurable water quality improvements in the Providence River as well as decrease the number of rainfall-induced closures in Conditionally Closed Areas "A" and "B". The high densities of quahaug broodstock observed in the Providence River combined with prior rainfall-induced closures in the Conditionally Closed Areas have resulted in a significant and sustained level of harvest. In order to sustain this harvest, it is recommended that an area-specific management plan be developed and implemented for the Providence River, Conditional Area "A" and Conditional Area "B". Alternatives include, but are not limited to, establishing new shellfish management areas, establish area-specific fishing periods, and adopt realistic possession limits. Establishment of "shellfish management areas" throughout RI coastal waters and comprehensive regulations would allow improved management by DEM and increased flexibility.

Soft-Shell Clam Endorsement

Commercial Landings: Since 1999, commercial landings of soft-shell clams in Rhode Island have increased by 661% (Figure 3). With the introduction of SAFIS landings have been coded by area since 2006. The majority of landings have come from Upper Narragansett Bay, 86% in 2007 (Table 2). These account for the rapid rise in landings associated with several large year classes occurring in the area of Conimicut Point.

Resource Assessment: Presently there are no assessments on the resource being conducted. This is due in part, because the bulk of the commercial landings are known to come from beds adjacent to Conimicut Point. The dynamic characteristics of the area combined with resource access limited by conditional and permanent shellfishing closures, makes reliable abundance estimates difficult to obtain. An analysis of catch-per-unit-effort (CPUE) derived from commercial landings was conducted in 2007 (Murphy, 2007). CPUE measurements are often used as a measure of population abundance. In the absence of a fishery independent survey of the resource CPUE based on commercial landings is the only information available regarding population abundance. CPUE provides a relative measure of abundance providing information on trends. Based on the analysis there was strong evidence that between the years 2006 and 2007 the abundance of soft shell clams has declined in the Upper Bay as a result of the rapid rise in landings. This was evidenced by a decrease in CPUE. There were no other significant trends observed for other areas of the State. The bulk of soft-shell clam landings are known to occur in “Conditional Area A” as evidenced by the spike in daily landings after each rainfall-induced closure is lifted. A further decline was observed in 2008 as indicated in Table 3. This decline is likely in response to two factors. DEM Water Resources found sufficient data to support changing the permanently closed area boundary. The new boundary goes from Conimicut Point to Conimicut Light to Nyatt Point. This change results in a loss of an estimated 25 acres of fishing area where soft-shell clams are known to be abundant. The second cause of the decline is likely in response to the spike in the number of participants combined with the liberal 12 bushel possession limit.

Fishery Management and Licensing Recommendations: Soft-shell clams are managed entirely within state waters by the Department of Environmental Management with advice from the Rhode Island Marine Fisheries Council. For 2008, in response to increased landings and evidence of population decline in upper Narragansett Bay, RIDEM limited the number of eligible participants in the fishery to the level present in 2007. The Department issued 235 commercial fishing licenses and 358 principle effort licenses with soft shelled clam endorsements, a new endorsement for 2008. The goal of the new endorsement was to cap effort through the use of the endorsement category in order to create a sustained resource in the state and avoid the boom and bust cycles that were observed in the soft shelled clam fishery in the past. Other restrictions in the fishery include permanent and conditional pollution closures, seasons, possession limits, minimum size and management closures.

In 2009, 206 commercial fishing licenses and 325 principle effort licenses with soft shelled clam endorsements were issued. As recommended by the RI Marine Fisheries

Council to the Director, new soft-shell clam endorsements will be made available using a 5:1 exit/entry ratio, as applied to all eligible licenses, Multipurpose Licenses (MPLs), Principal Effort Licenses (PELs) with soft-shell clam endorsements, and Commercial Fishing Licenses (CFLs) with soft-shell clam endorsements, that retired in 2009. Since there were 84 such retirees, 17 new soft-shell clam endorsements on Commercial Fishing Licenses (CFLs) will be available in 2010.

Future Management Considerations and Recommendations: The Narragansett Bay Commission's combined sewer overflow project may potentially result in measurable water quality improvements in the Providence River as well as decrease the number of rainfall-induced closures in Conditionally Closed Areas "A" and "B". Landings from the high densities of soft-shell clams at Conimicut Point area, currently subject to rainfall-limited harvest, could further decline without implementation of more realistic management measures. The isolated characteristics of the Conimicut Point fishery make the clams particularly vulnerable to variations in fishing effort. Additionally, a permanent pollution closure line bisecting the bed makes enforcement problematic.

Alternatives to protect this fishery include, but are not limited to, establishing new shellfish management areas, establishment of area-specific fishing periods, adoption of more realistic possession limits, and increasing the minimum legal size to 2 inches. Measures should be implemented while the aforementioned closure boundary at Conimicut Point is in effect.

Establishment of "shellfish management areas" throughout RI coastal waters and comprehensive regulations would allow improved management by DEM and increased flexibility.

Other Shellfish Endorsements

Other species of shellfish commercially harvested within Rhode Island waters include oysters, surf clams, whelks and blue mussels. While these species are not routinely assessed by RIDFW and little data is available to conduct comprehensive analytical assessments, landings data and anecdotal evidence from the commercial fishing industry are useful pieces of information in identifying populations that warrant further research.

Commercial Landings: Regarding the oyster stock, landings have decreased since the late 1990's (Figure 4). According to local researchers studying oyster populations within Narragansett Bay, the effects of disease, environmental conditions, poor sets of new recruits, and fishing pressure are all responsible for the sharp decline in abundance levels (Oviatt et. al, 1998). It is a reasonable assumption that given such high rates of natural mortality, fishing pressure can lead to local depletions of the resource. Recently dead oysters (open shells) are visual evidence of the oyster disease effects. This occurs in both fished and unfished RI waters. Further investigation into the effects of fishing effort is certainly warranted; however, until the extent of the influence that fishing effort and poor recruitment has on abundance is ascertained the Division recommends reducing the daily possession limit accordingly. Establishment of new spawner sanctuaries and harvest

moratoria are considered important components of the collaborative oyster-restoration efforts that are underway. Initiating further research and monitoring to track abundance and recruitment success is needed.

Management Program- oysters, blue mussels, whelks, and surf clams are managed in state waters by the Department of Environmental Management with advice from the Rhode Island Marine Fisheries Council. Additional federal regulations apply to surf clams and ocean quahogs in the EEZ. The Department uses seasons and possession limits to manage the state waters fishery. Permanent and conditional pollution closures further restrict the fishery in addition to the above management measures. The Department in cooperation with both federal government and non-government organizations has been conducting oyster restoration in the salt ponds and Narragansett Bay. In 2009 a minimum size for whelk was established in response to industry requests. The Department recommends a reduction in the daily possession limits of oysters for both commercial and recreational harvest.

Licensing Options and Recommendations- No changes are recommended for the licensing program for shellfish that fall under the non-quahog endorsement category excluding soft-shell clams until better data is available on their status. It is also recommended that new commercial licenses continue to have basic harvest levels equal to current licensees for this endorsement.

Literature Cited

Erkan, D.E. and M.R. Gibson (2006). 2005 Shellfish Survey of Potter Pond South Kingstown, Rhode Island. RI Division of Fish and Wildlife.

Ganz A.; Lazar N.; Valliere A.(1999). Narragansett Bay Quahog Management Plan. RI Division of Fish and Wildlife. Report to the Narragansett Bay Project and RI Marine Fisheries Council.

Gibson, M.R. 1999. Assessment of quahogs (*Mercenaria mercenaria*) in Narragansett Bay: technical analyses in support of a bay wide quahog management plan. RI Division of Fish and Wildlife. Res. Ref. Doc. 99/2.

Murphy, B.R. 2007. Estimation of Catch per Unit Effort for the Commercial Soft Shell Clam (*Mya arenaria*) Fishery in Rhode Island. RI Division of Fish and Wildlife.

Oviatt, C, Wolff, N, VanKeuren, D, and Nicosia, E. (1998). Oysters (*Crassostrea virginica*) as indicators of a climate warming trend in Northeast waters. CR822051-010 Final report. Funding agency: Environmental Protection Agency.

Table 1. Total count of quahogs landed commercially in Rhode Island in 2008 by area and market category.

	Little Neck	Top Neck	Cherrystone	Chowder	Total
Unknown	25453	4957	4,392	1570	36372
Upper Narragansett Bay	2309287	1081840	219,086	708154	4318368
Greenwich Bay	3275439	294296	21,262	107285	3698280
Narragansett Bay – West Passage	6287633	3106065	682,443	1638396	11714536
Narragansett Bay – East Passage	1095680	671130	9,047	516375	2292231
Sakonnet River	118925	46224	90	102756	267995
Block Island	16348	1210	370	110	18037
Ninigret Pond	1501	180	14	20	1715
Point Judith Pond	395174	96485	5,258	30844	527761
Quonochontaug Pond	16238	1822	405	20	18485
Winnapaug Pond	1768	187	4392	118	2073
Grand Total	13543444	5304394	942,365	3105647	22895851

Table 2. Commercial soft shell clam landings (pounds) by area

	2007		2008	
Unknown	21,770		8,820	1%
Upper Narragansett Bay	1,019,660	86%	519,762	73%
Greenwich Bay	7,224	1%	5,704	1%
Narragansett Bay – West Passage	102,873	9%	151,825	21%
Narragansett Bay – East Passage	4,532	0%	4,856	1%
Sakonnet River	3,176	0%	860	0%
Point Judith Pond	21,293	2%	20,115	3%
Quonochontaug Pond	4,811	0%	2,218	0%
Ninigret Pond	471	0%	388	0%
Winnapaug	2,614	0%	72	0%
Total	1,188,423		714,620	

Figure 1. Total Weight of Quahaugs Commercially Landed in Rhode Island, 1950 to 2008

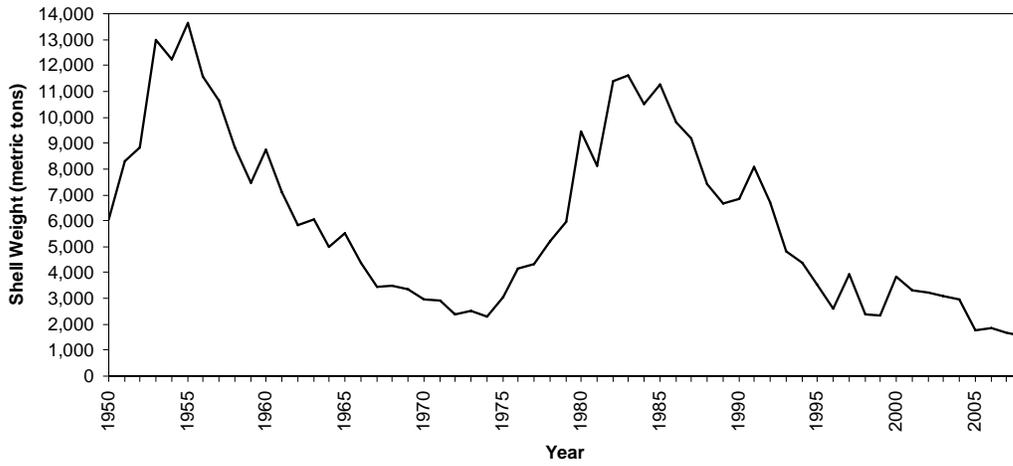
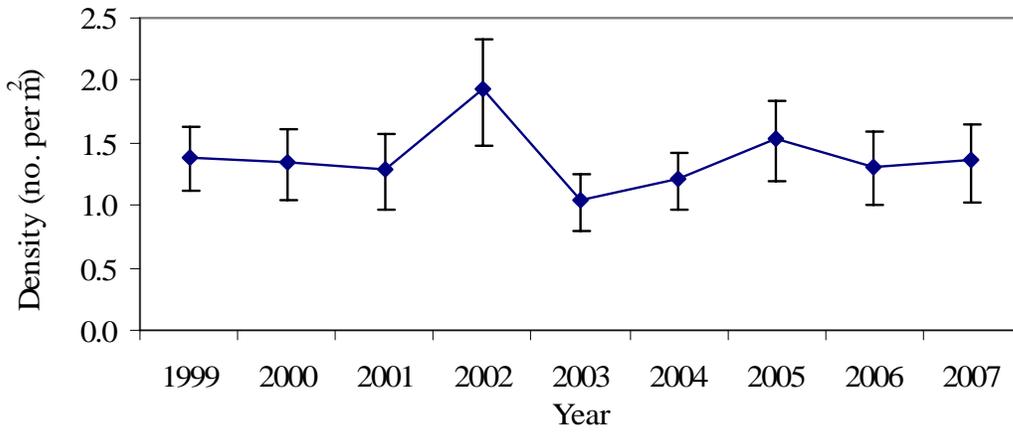
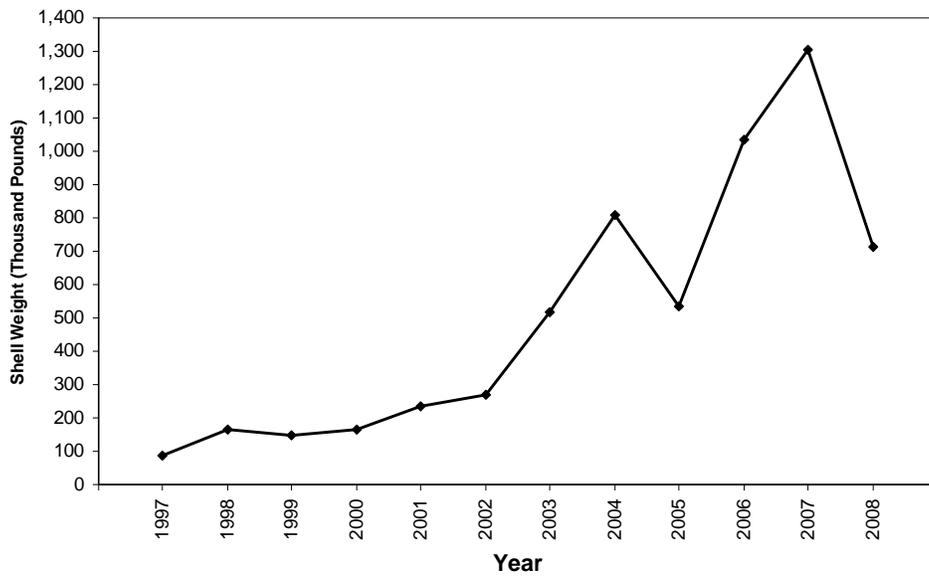


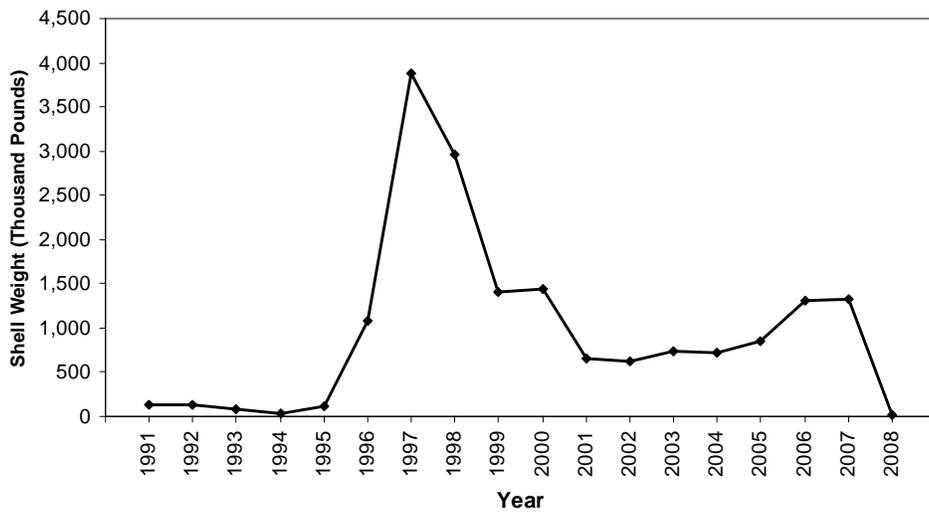
Figure 2. Stratified mean density of quahaugs within Narragansett Bay



**Figure 3. Total Weight of Soft-Shell Clams
Commercially Landed in Rhode Island, 1997 to 2008**



**Figure 4. Total Weight of Oysters
Commercially Landed in Rhode Island, 1991 to 2008**



Rule 8. EFFECTIVE DATE

The foregoing rules and regulations Rhode Island Marine Statutes and Regulations, after due notice, are hereby adopted and filed with the Secretary of State this 8th day of December, 2009 to become effective 20 days from filing, unless **otherwise indicated below**, in accordance with the provisions of Chapter 42-17.1, Section 20-1-4, Section 20-2.1 and Public Laws Chapter 02- 047, in accordance with Chapter 42-35 of the Rhode Island General Laws of 1956, as amended.

W. Michael Sullivan, PhD
Director, Department of Environmental Management

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Public Hearing: 10/21/2009

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Effective date: 12/28/2009