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Chapter 1 : Bay Water Quality Report- Rhode Island -Department of Environmental Management

Title. Hurricane survey, interim report, Narragansett Bay Area: Rhode Island, Massachusetts / By. United States. Army. Corps of Engineers. New England Division.

Chlorophyll levels have declined throughout the bay with the rain and clouds that persisted for most of the week. This is an improvement from last week. A spatial survey this week showed oxygen levels as low as 0. The rust tide appears to have declined during early September in most parts of the Bay. Hypoxic values at the bottom were observed in the Providence River Channel down to Bullocks reach, with values from 1. This fish kill is likely due to hypoxic conditions. View station, in the upper West Passage, is also reporting similar condition in the bottom waters only. These levels can be attributed to these bloom patches *Cochlodinium polykrikoides* in these areas. Abundance of HAB phytoplankton *Alexandrium* spp. Sampling has indicated that *Cochlodinium* abundance in the most-dense patches is in the , to 1 million cells per liter range, a decline from the levels observed in early August. It is expected that rust tide patches will persist and continue to move around the Bay, dependent on wind, tide and currents until the water cools. *Cochlodinium* does not produce a toxin that is harmful to humans, so it is safe to swim, fish and shellfish while the rust tide is present. The cool fronts this week have helped to improve conditions throughout the bay. Northerly winds have helped to mix the water column and improve oxygen conditions. A spatial survey conducted this week, revealed low oxygen levels persist in the northwestern portions of Greenwich Bay. While these single celled organisms are small, they can reach abundance levels. These levels can be attributed to these bloom patches. These events will continue to be monitored closely. About 1, fish juvenile menhaden, river herring, juvenile weakfish, eels were dead near the mouth of Apponaug Cove. Oxygen levels were measured along the docks with a surface DO between 3. Bottom DO was between 0. Dead shrimp in Greenwich Cove near Chepiwanoxet Point were also reported. Low oxygen is the probable cause for these fish kill events. The potential threat of additional fish kills remain high in Greenwich Bay based on the water quality information this week. All of these events will continue to be monitored closely. While these single celled organisms are small, they can reach abundance levels of millions of cells in one liter of water. This elevated abundance can cause noticeable water discoloration or rust tide. RIDEM will continue to monitor the rust tide during summer Oxygen levels in the Providence River and Upper Bay have declined further this week. This is a decline from last week bay wide. There is a large bloom in Greenwich Bay consisting of primarily *Cochlodinium* spp. These large events will continue to be monitored closely. This is a decline from last week. For species information see the harmful algal bloom report HAB below. These events will be monitored closely. Abundance of HAB phytoplankton species *Alexandrium* spp. A single sample collected at Block Island had slightly elevated *Alexandrium* spp. While not routinely monitored, abundance of *Cochlodinium* spp. HAB phytoplankton monitoring will continue, with the next report expected in early September. Dissolved oxygen concentration in the Providence River have improved this week. The western Greenwich Bay station continues to record several hours per day with oxygen concentrations below 2. The coves, such as Greenwich Bay, are reporting the highest temperatures. Dissolved oxygen levels have declined in Greenwich Bay. HAB Report for June *Pseudo-nitzschia* abundance in the coastal salt ponds samples collected in Pt. Abundance of other HAB species *Alexandrium* spp. *Alexandrium* abundance increased during mid-May May at multiple locations throughout the Bay. All four of these samples tested negative for saxitoxin in the plankton by Scotia tests. Samples collected in late May suggest that *Alexandrium* abundance has declined following the brief mid-May increase. *Dinophysis* abundance has begun its summer increase, but remained far below actions levels during May Abundance of *Pseudo-nitzschia* spp. However, *Pseudo-nitzschia* abundance in those areas declined dramatically to 0 to 1, cells per liter following the sustained northeast winds of Tropical storm Maria. During October , *Pseudo-nitzschia* was largely absent or at low abundance throughout Narragansett Bay. Modest levels of *Pseudo-nitzschia* 1, to 7, cells per liter, well below the threshold of concern remained in the coastal

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waters near the breach-ways of the coastal salt ponds during late October Judith Pond all had *Pseudo-nitzschia* abundance of near or slightly above 20, cells per liter. Follow-up sampling of shellfish in these areas showed no evidence of domoic acid accumulation in the shellfish. Hope Bay and the Sakonnet River. Other HAB phytoplankton species *Alexandrium* spp. We will continue to track *Pseudo-nitzschia* abundance in the lower Bay and along the south coast of RI over the next several weeks. Water clarity has also improved this week bay wide. The elevated chlorophyll levels in Greenwich Bay are related to a persistent patchy bloom event. These patches were noted in Greenwich Bay and its coves for the past few weeks. For more information on the *Cochlodinium* bloom, see HAB report below. These low oxygen and bloom events will continue to be monitored closely. Phytoplankton monitoring has indicated an absence of *Alexandrium* spp. However, an increase in abundance of *Pseudo-nitzschia* spp. *Cochlodinium* patches in the Bay during August have been less extensive than those observed during The elevated chlorophyll levels in Greenwich Bay are related to a bloom event that is occurring in this area. These patches were noted in Greenwich Bay for the past few weeks. The elevated chlorophyll levels in Greenwich Bay are related to a bloom event that is occurring in this area see below. Abundance of potentially harmful algae remained low during the first two weeks of August HAB Harmful Algal Bloom species were either absent or at low abundance levels of less than 1, cells per liter in twenty one 21 samples collected at sites in Upper Narragansett Bay, Greenwich Bay, Mt. Hope Bay, the coastal salt ponds and at Block Island. DEM and RI will continue to monitor for potentially harmful algae, with the next report in late August The bay proper remains well mixed this week. Larval crabs *Polyonyx* spp have been observed throughout the bay this week. Harmful algae bloom monitoring by RI DEM and the RI Department of Health showed that abundance of potentially harmful species of phytoplankton remained low during the first week of August Small rust red patches of *Cochlodinium* at levels of 1 " 2 million cells per liter were observed in Greenwich Bay at the mouth of Greenwich Cove and Apponaug Cove. With cool conditions and high winds this week, the bay water column is well mixed. Another spatial survey is scheduled for next week. Abundance of potentially harmful phytoplankton remained below levels of concern during the second half of July Samples collected between July 17th and July 27th indicated that *Alexandrium* spp were absent in most samples, with a maximum abundance of 80 cells per liter. These low oxygen events will continue to be monitored closely. This low oxygen event will be monitored closely. Abundance of harmful algae remained low during the last week of June and the first two weeks of July Abundance of *Alexandrium* spp. Follow-up sampling during the third week of June indicated that *Pseudo-nitzschia* abundance was declining in these areas. A spatial survey, through Brown University, was conducted this week throughout the Upper Bay. Samples were collected at 24 locations in RI marine waters spanning from Upper Narragansett Bay to the nearshore waters south of Jamestown, Newport and Sakonnet, five salt ponds and Block Island. Results showed that HAB phytoplankton species were either absent or, if present, were present at low levels. There is a uniform water column with high winds this week. The *Cochlodinium* has become more sporadic; earlier this week, the only patches were observed in Mount Hope Bay. It is expected to see the bloom event decline with the cooling temperatures. For more information about *Cochlodinium*, please see this downloadable fact sheet. The water column is more uniform, with no evidence of stratification. Greenwich Bay is reporting the lowest oxygen readings this week at 3. However, the bloom patches have become more sporadic this week. All other parameters are reporting normal for this time of year. Schools of menhaden have been spotted throughout Greenwich Bay.

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Chapter 2 : [PDF] Moonfall By Joseph F Cohan - calendrierdelascience.com

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Site Selection and Analysis Eastern and Western Passage to Narragansett Bay Rhode Island—the Ocean State—is a small state with a long shoreline which extends inland to include multiple waterways, most notably, the sq km Narragansett Bay. Shoreline types on the bay include fringing and meadow salt marshes, bulkhead and other modified perimeters and the coastal areas feature a combination of disturbed sites, preserved marshland, and post-industrial fill. Current shoreline planting strategies offer few solutions for wide ranging conditions and focus on preservation rather than creating solutions which might yield robust landscapes which are resilient to climate change. Rhode Island was not subject to the worst losses from the devastation of Hurricane Sandy, and thus it is an exemplary site for developing structures of coastal resilience, which can be advanced gradually and through systematic evaluation and adaptation. Storm surge and upland flooding in the Narragansett watershed pose a considerable risk to coastal towns along the Bay. As increased urban runoff and higher salt water levels merge on the coastal zone, some species are threatened while others adapt. Marsh and dunes recede while weedy forest cover creeps closer to the beach front. Plants with high salt tolerance that are capable of rapid establishment have begun to colonize areas with accommodating soil. Designers can capitalize on this process, deploying plants to prevent erosion and build resilient coasts. This project proposes a combination of large stands of vegetation with minimal, precisely located, hardened coastal structures to provide cost-effective redundancy to coastline protection measures, add to the life span and effectiveness of traditional coastal structures, limit coastal erosion, and provide habitat and recreational space. The project focuses on three sites representative of three coastal conditions: The Graduate School of Design envisions coastal forests and shrub lands as a novel ecosystem, a cultural resource, and a social and economic opportunity. The plants were disturbed by wind and salt spray during Hurricane Sandy, but as a result of their inherent resilience have not only survived, but prospered. In particular, this stand of *Sassafras albidum* prevails due to its assertive root suckering performance. *Rosa rugosa* A large thicket, primarily *Rosa rugosa*. Although listed as a noxious weed in 46 states, *R. A* vigorous sprouter, this rose is so well adapted to salt spray, sandy substrate and disturbance, that it provides erosion control without the need for costly installation strategies. The image above shows a two-year old, self-regulated regeneration following Hurricane Sandy. Sachuest Area of interest 1- Sachuest. The relationship between a critical drinking water reservoir for the Newport area, and its proximity to open water is explored in this survey, indicating critical but conflicting adjacencies. A remnant coastal forest can be observed at high ground towards the West, indicating a former shoreline condition that would have existed prior to the filling of this marsh, and the construction of the reservoir. Hummocks Area of interest 2- Hummocks. Low elevations are clearly identified in this survey, which tracks the upland marsh, the reinforced circulation routes and the narrow effects of tidal fluctuation, making it an area prone to seasonal flooding and heavy rates of surge along the Sakonnet River. Warren Area of interest 3- Warren. Public beaches, primary residences and tides convene in this survey, explicating conflicting cultural and ecological imperatives. While public beaches ought to remain a resource, edge conditions necessitate multiple functions. Warren is positioned in a complex of waterways and population density, making relocation not only a consideration but also a certainty. Design Panorama The Graduate School of Design approaches Natural or Nature Based Features NNBF not as a construction detail or as a hardened assembly, but as a durable bionetwork, which will necessitate long-term thinking and large-scale action. A series of designed forests can become a public resource- a novel ecosystem that not only anticipates disturbance, but thrives on it. However, resilience can also be a micro-condition. Trees with a single stem and a high canopy are particularly susceptible to environmental disturbance. In our proposed design, we specify trees that break or fall and then re-sprout secondary trunks, making them resilient in the face of strong winds and erosive waves. Forests of multi-stemmed, disturbance-adapted specimens will reproduce readily. Shrubs,

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by contrast, develop a thicket or a mass of offshoots which yields a horizontal spread, rather than a vertical elevation. Most shrubs require a complete disturbance often being cut to the ground in order to reemerge as larger and hardier thickets. The combination of a dense, rhizomatic substrate and a copse-like arrangement creates a layer of growth that will both attenuate and mitigate the effects of storm surge. These planted barriers will be activated by disturbance, generating larger, more productive environments as they develop.

Chapter 3 : Hurricane survey, interim report, Narragansett Bay Area : Rhode Island, Massachusetts / - CO

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Chapter 4 : Narragansett Bay, RI | Structures of Coastal Resilience

U.S. Army Corps of Engineers, , Hurricane Survey Interim Report: Narragansett Bay Area, Rhode Island and Massachusetts, 73 p. Upson, J.E. and Spencer, C.W., , Bedrock Valleys of the New England Coast as Related to Fluctuations of Sea Level: U.S. Geological Survey Professional Paper M, 31 p.

Chapter 5 : Photos: Remembering The Great Hurricane Of '38

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Chapter 6 : Jamaica Bay, NY | Structures of Coastal Resilience

Hurricane Season A Collection Of Short Stories By Lela E Buis I Defy You Stars A Stand Alone Novel Part Of The Shakespeare Collection By Katie M John The Mercenaries: Thunderkill.