The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

February 3, 2016

The Honorable Jeb Bradley, Chair
Senate Energy and Natural Resources Committee
State House, Room 100
Concord, NH 03301

RE: SB375, *AN ACT establishing the coastal marine natural resources and environment commission.*

Dear Chairman Bradley and Members of the Committee:

Thank you for the opportunity to comment on SB375. This bill would create the coastal marine natural resources and environment commission whose duties would include: 1) investigating, monitoring, and proposing prevention and mitigation strategies for emerging environmental threats in coastal waters; 2) identifying gaps and making recommendations for water quality monitoring strategies; and, 3) making recommendations concerning "blue carbon" credit program revenues for sea grass promotion and oyster bed restoration. The New Hampshire Department of Environmental Services (NHDES) supports the proposed bill and offers the following information as background for your consideration.

Ocean Acidification:
Global ocean carbon chemistry is rapidly changing in response to rising levels of atmospheric carbon dioxide (CO2). One result of this changing chemistry is ocean acidification which reduces surface ocean pH, resulting in decreased availability of the materials important to shell and mineral formation. The Northeast Coastal Acidification Network (NECAN), formed in 2013, is the leading organization in the northeast for the synthesis and dissemination of regional ocean acidification data and information. NECAN's members include scientists, state and federal agency representatives (including NHDES), resource managers, and industry partners. Additional information about NECAN can be found at http://www.neracoos.org/necan.

In addition to NECAN, there are a number of legislative efforts underway at both the state and federal level regarding ocean acidification. For example, in 2014, the Maine Legislature established the Commission to Study the Effects of Coastal and Ocean Acidification and its Existing and Potential Effects on Species that are Commercially Harvested and Grown along the Maine Coast. Other states that have established or have introduced legislation to establish ocean acidification commissions include Massachusetts, Rhode Island, Maryland, Oregon, and Washington. Additional information regarding ocean acidification efforts at both the state and federal level is attached for your convenience.

Increasing Ocean Temperatures:

New research from the Gulf of Maine Research Institute indicates that from 2004 to 2013 temperatures in the Gulf of Maine rose faster than in 99.9 percent of the world's oceans. The research

suggests that rising ocean temperatures contributed to decreased reproduction and increased mortality among the Gulf of Maine's already depleted cod stocks. In addition, rising ocean temperatures are altering the spatial and seasonal distributions of many fish and invertebrate species forcing them to shift from their traditional habitats toward areas whose temperatures are more suited to their survival.

Blue Carbon:
Blue carbon is the carbon captured by living coastal and marine organisms and stored in coastal ecosystems. Sea grass beds and salt marshes along our coast absorb large quantities of carbon dioxide from the atmosphere (a process known as carbon sequestration) and store it primarily in sediments (a process known as carbon storage). These types of habitats are commonly referred to as carbon sinks and contain large stores of carbon which have accumulated over hundreds to thousands of years. When these habitats are damaged or destroyed, not only is their carbon sequestration capacity lost, but stored carbon is released to the atmosphere.

Currently there are efforts underway here in New Hampshire to analyze key ecosystem services, including blue carbon, to maximize the value of restoration and other activities. One ongoing project, led by the NHDES Coastal Program together with several partner organizations, seeks to better understand the ways in which people benefit from the Great Bay estuary ecosystem. As part of this effort, the project team has gathered existing maps of eelgrass, oyster beds, and salt marshes and is using available data to estimate the amount of blue carbon stored and sequestered by these habitats. With this information, the project team will be able to estimate the economic value of existing carbon storage in eelgrass, oyster beds, and salt marshes and investigate how carbon storage could change in the future as the key carbon storage sink habitats are restored or lost.

Thank you again for the opportunity to comment on SB375. If you have questions or need additional information, please contact Ted Diers (ted.diers@des.nh.gov or 603-271-3289) or Steve Couture, Coastal Program Manager, (steven.couture@des.nh.gov, 271-8801).

Sincerely,

Thomas S. Burack
Commissioner

Attachment

cc: Sponsors of SB375: Sens. Watters, Stiles, Fuller Clark; Reps. F. Rice, Cushing, Borden, Schroadter