

Nearly all of the seagrass sites sampled showed that nitrogen pollution was the major stressor; however, the sources of nitrogen differed among the sampling locations. At study sites in the coastal bays of Rhode Island, Connecticut and Long Island, seagrasses were primarily stressed by nitrogen pollution from sewage; while seagrasses sampled from Cape Cod and the eastern end of Long Island Sound were mainly affected by excess nitrogen from the atmosphere and fertilizers, in addition to sewage.

Picking up where the first phase left off, the research's second phase focused on further evaluating human-made sources of stress, including the combined effects of nitrogen pollution and temperature. It then examined a series of targeted embayments throughout the Southern New England and New York study area where restoring enabling conditions would most likely preserve existing seagrass habitat or support recovery of lost habitat.

OUTCOMES

Completed in spring 2014, the research's second phase adds important information. The new findings indicate that:

- Septic systems and cesspools are the predominant source of nitrogen pollution from non-point sources at most of the sites sampled throughout the Southern New England region.
- Understanding the sources of nitrogen, and the relative contributions from each source, is necessary to ensure resources and management practices are targeted correctly at the sources of the problem, which can vary from one bay to the next.
- Even small increases in temperature can impact the long-term survival of the remaining eelgrass beds in the region and may explain why restoration attempts have been hampered in many estuaries.
- Many of the bays studied are at high risk if nothing is done. However, if nitrogen pollution is reduced, the environmental conditions seagrass meadows and other coastal habitats need to thrive can be restored.
- We can reduce nitrogen pollution entering our waters by using better technologies that are available to treat our wastewater and by working with the agriculture industry, landscapers and homeowners to put best management practices that reduce the impacts of fertilizers into use.
- Additional research is needed to identify and quantify sources of nitrogen, to assess hydrodynamic conditions and to establish targets that maintain or improve ecological and human health conditions in bays and harbors.

For more information, visit <http://goo.gl/yQyTHM>

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