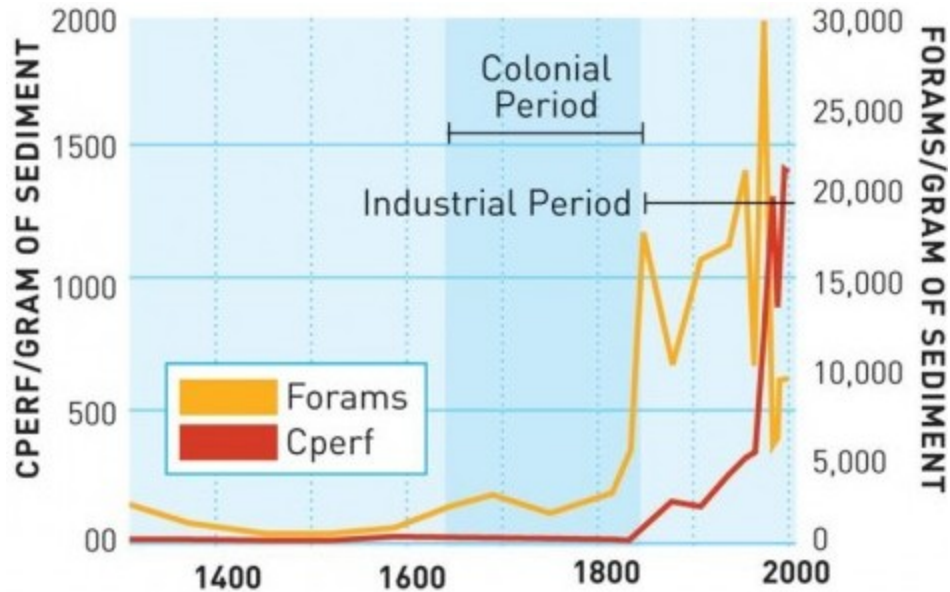


Archived Long Island Sound Study Legacy Indicator

Increases in Population and Sewage



Johan Varekamp, Wesleyan University.

<http://www.wesleyan.edu/ees/JCV/Lobsters%20Report%20final.pdf>

WHAT ARE CPERFS AND FORAMS?

Clostridium perfringens (Cperf), a bacterial spore found in sediments, is an indicator of the amount of sewage (treated or untreated) input to the Sound. The bacteria that produce these spores live in the guts of mammals and are capable of surviving sewage treatment. Foraminifera (Forams) are microscopic plants that feed on nitrogen-rich sewage (untreated).

WHAT DOES THIS INDICATE?

The increase in Cperf reflects the increase in sewage (treated or untreated) entering the Sound as a result of the increase in human population. The increase in foraminifera (forams) is an indicator of more eutrophication, likely fueled by nitrogen-rich, untreated sewage. A decrease in the concentration of forams indicates a decrease in the amount of untreated sewage entering the Sound.

STATUS

This is a historic indicator which shows a drastic increase in Cperfs and Forams at the end of the Colonial period and at the start of the Industrial period most likely caused by increases in population and sewage producing industries before sewage treatment plants were widespread technology. In recent times Cperfs concentrations have continued to increase due to continual

increases in population. Whereas, Forams concentrations has declined most likely due to the building of sewage treatment plants and recent improvements to those plants to lessen the amount of untreated and nitrogen- rich sewage reaching the Sound.

DATA NOTES

Sediment samples were collected off the Norwalk coast.

Since sewage in coastal waters is often a major source for other contaminants (such as silver, copper, and mercury), measuring spore concentrations is a valuable screening technique for predicting the magnitude and distribution of other contaminants in sediments.

(<http://pubs.usgs.gov/fs/fs113-99/>)