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MIT Project Combats Mutant Alga

BROWN SLOP

Project Combats Mutant Alga

By Donna Coveney

News Office

When residents around Nahant Bay, Lynn and Revere see and smell the gelatinous brown slop on the shore and in the sea they say, in despair, "It's ba-ack." As though in some B horror movie, the alga *Pilayella littoralis*, a mutant form of an alga indigenous to the area, proliferates and fouls beaches and water in its wake.

MIT's Sea Grant, in an effort to come to the rescue, has designed and successfully tested a prototype for an algae harvesting system to remove the nasty stuff. The system consists of a centrifugal pump hooked up to a large vacuum dredge that is towed through the algae, scooping and sucking it through a hose into a screened-in container. The container captures the algae while letting the sea water drain out.

Cliff Goudey, Sea Grant fisheries engineer and project manager, said, "We're having good luck in this experimental phase. We'd have to scale up for commercial use. It is a cost-effective way of removing the algae." Goudey is working on the project with Jim Meneghini, a junior in civil engineering.

Currently the only removal method is to bulldoze the beaches the foul-smelling *Pilayella* washes up on, and drop it back at water's edge.

Unfortunately more sand is scraped up than algae and the decomposition piles continue to add nutrients to the water. In addition, relief is short-lived. *Pilayella* is back with the next tide.

Pilayella littoralis is an unusual free-living planktonic mutant form of the most abundant bottom-attached brown alga in the North Atlantic. Why it mutated into a free-living form is not really known, though it seems to need the high level of nutrients and relative calm of Nahant Bay. It is, however, moving south into Broad Sound and Revere Beach, as far south as Winthrop. Its growth may be driven by the amount of nutrients coming into the water from sewage outfalls and run-off in the area. *Pilayella* has been in Nahant Bay since 1900 or earlier. It has only begun to proliferate at its current alarming rate since 1987. No one knows at this point what caused the sudden growth. As a result, no one knows how to curtail the alga's growth once it establishes itself, and scientists fear that if *Pilayella* continues to move south it could cause serious problems in Boston Harbor and potentially on shorelines all the way to Cape Cod.

Disposal of *Pilayella* remains an unanswered and pressing problem.

Alternatives suggested are burying the algae in landfill, or dumping them several miles out to sea, where it is believed they cannot survive. Use of *Pilayella* as a composting or aquaculture feed stock is also being investigated.

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