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DOWN TO A SCIENCE

Students learn about Shore's environmental future

BY [KIRK MOORE](#) • TOMS RIVER BUREAU • JANUARY 24, 2008

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TOMS RIVER — A warmer Barnegat Bay afflicted with stinging jellyfish is just the opener in an era of environmental change that will challenge the next generation and their children, a top Rutgers University scientist told environmental science students at Toms River High School North.

Imagine a sea level rise between three feet and 40 inches over this coming century, research professor Michael J. Kennish told about 100 students gathered in the school's media center last week. A projection screen flashed aerial images of Barnegat Bay wetlands and Atlantic City's beachfront casino hotels.

"You guys are going to have to deal with this issue, because it's not going away," Kennish said, describing how marshes will erode and the bay widen, while the sea gets closer to those hotels. "This is unprecedented, because our shoreline is established. The buildings are there. How do you

move the Taj Mahal?"

For students considering academic and career choices in the sciences, it means New Jersey and the Mid-Atlantic region will be an interesting place to study, said Kennish, who started at Rutgers as a undergraduate geology major in the 1970s and now leads a coastwide scientific assessment for the university.

"He sets the focus on local environmental issues," which is how the High School North environmental curriculum is oriented, said teacher Bob Manino. He invited Kennish to speak to students after seeing him address a seminar here last year sponsored by the League of Women Voters.

"The future in terms of solving the complex problems along our coastline is going to fall on the shoulders of people in this room," Kennish said, stressing that protecting what's left of those ecosystems will extend decades into the future.

"There's a lot of (government) regulation for human uses, for things people want to get out of the system," such as water supplies, fish and recreation, Kennish said. "There's not a lot for what I call aquatic life support."

While climate change has raised Barnegat Bay's average year-round water temperatures since the mid-1990s, its water chemistry and native soup of microscopic plants and animals have been changed by human use of land in the bay watershed, Kennish told the students.

"It's over-used and over-developed," he said. To preserve the bay's water quality, no more than 20 percent of the adjoined watershed lands should have been developed, but "today it's at 30 percent," Kennish said.

The result is a flood of nitrogen compounds from lawn fertilizer, air pollution and suburban sources. The problem could be stemmed, even repaired somewhat, but it would take tight limits on further land development and an overhaul of the region's storm water drainage systems, he said.

That's led to a loss of diatoms, plankton that nourished the bay's once-flourishing clam beds. Nitrogen



Rutgers professor Michael J. Kennish talks with Toms River High School North environmental students about coastal ecology, the problems of Barnegat Bay and global warming. (STAFF PHOTOS: DAVE MAY)

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over-fertilizes bay waters, fueling the growth of sea lettuce, a drifting algae that smothers native eelgrass beds on the bay bottom. Sea nettle jellyfish populations explode, eating up tiny animals in the plankton mix and sucking energy out of the ecosystem, Kennish said. But most political leaders and residents "don't see we have a structural problem with the environment," Kennish said. "They come to Rutgers and ask, "How can we get rid of these jellyfish?'. . . Once you change these things, it's very difficult to go back to the original state. The nitrogen problem is an entire ecosystem effect. We're seeing the effects at all levels."

Senior Robb LaVecchia asked what the effects would be of closing the Oyster Creek Nuclear Generating Station in Lacey, noting how the plant's warm-water discharge supports a summer-like fish population in winter.

The heat is "an unnatural condition," and fish kills like one caused by a shutdown late last year are just a small part of the plant's environmental costs, Kennish said. Without a cooling tower to recycle cooling water, the flow-through system at the plant sucks in and kills millions of microscopic life forms annually, including eggs and larvae of fish and shellfish, he said.

in your voice

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MRDOOWOP wrote:

THERE IS ABSOLUTELY NO IRREFUTABLE EVIDENCE, THAT GLOBAL WARMING IS CAUSED BY HUMANITY, AND NOT A "NATURAL CYCLE", LIKE THE ICE AGE ETC. ETC. TO THINK THAT "MAN" CAN STOP MOTHER NATURES NATURAL CYCLES, IS ARROGANT, AND INSANITY. WHEN EARTH IS DONE WITH MANKIND, SHE WILL SHAKE LIKE A DOG GETTING RID OF FLEAS, AND THIS CYCLE WILL BE OVER. WE CAN DO NOTHING TO CHANGE IT.

1/25/2008 12:51:39 AM

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RichardSchiff wrote:

Right now there are houses going up within 30' of Long Swamp Creek off route 37 at Brookside Drive in Toms River. The land was never to be built on. The creek is terribly polluted from Nonsource Point Pollution, runoff from the Ocean County Mall and houses at its north end. It feeds into the Toms River and into Barnegat Bay. This land was donated to the government and people of Toms River for a Park and the all GOP government sold it to unscrupulous developpers who are now building houses that will contribute to the pollution and endanger the children who live in those houses. This is a travesty! Where is the DEP?

1/25/2008 12:25:38 AM

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npa11 wrote:

This is why development around the wetlands of Atlantic City must stop now. Currently the "bayport" project leveled acres of undeveloped land to build townhouses on lakes bay. Similar to that would be the gateway project next to the expressway toll. Leveling wetlands and low lying uplands to build a residential community. This development must be stopped and rethought, because once it's built, there is no going back.

1/24/2008 12:14:03 PM

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