

Expanded Wastewater Plant Won't Harm Salt Marsh, Experts Say

[by Alan Pollock](#)

CHATHAM — When the wastewater treatment plant on Sam Ryder Road grows to meet the needs of an expanded sewer system, the nitrogen discharged into Cockle Cove Creek probably will not harm the salt marsh, according to a long-awaited report announced last week.

Dr. Robert Duncanson, director of the town's department of health and the environment, received the report late Monday afternoon. The three-part document details the findings of the Massachusetts Estuaries Project's Cockle Cove salt marsh study.

“Based on the current health of the Cockle Cove salt marsh, and what we have proposed for a treatment level, nitrogen will not be an issue from discharge from the existing treatment plant site,” Duncanson told the board of selectmen Tuesday.

When the wastewater plant is expanded and outfitted with tertiary water treatment equipment, it is expected to discharge 3 mg/l of nitrogen to the groundwater, the majority of which flows toward the creek. The MEP found that the salt marsh could naturally absorb that amount of nitrogen without any ill effects. Thus, if the wastewater plant design works, and the plant performs according to specifications, it won't significantly contribute to nitrogen loading in the creek.

The study's findings represent good news for the town's wastewater plan. If researchers had found that the marsh cannot absorb any more nitrogen, it would have complicated plans to expand the plant. The plant's capacity must be increased to accommodate extending sewer mains to most of the town, in a bid to clean up nitrogen pollution in the town's other coastal waters.

It was recently learned that the treatment plant site, and an alternate discharge site on Middle Road, has the capacity to dispose of up to 30 gallons of treated water per day, per square foot. That number is much higher than the 5 gallon per day per square

foot capacity of most sites reviewed by the Department of Environmental Protection, Duncanson said. The site has a high recharge capacity, which is good news for us,” he said.

But the Cockle Cove Creek salt marsh study’s news wasn’t all positive. Researchers raised concerns about potential changes to the salt marsh’s salinity as a result of the increased freshwater effluent from the plant. When too much fresh water intrudes in a salt marsh, it can stimulate the growth of phragmites, an invasive species of reeds which choke out natural habitats.

Researchers acknowledged that phragmites does not appear to be a problem in the Cockle Cove Creek system now, and there was no phragmites expansion when the plant was first brought on line years ago. They also note that groundwater modeling from the U.S. Geological Survey suggests the freshwater effluent may travel under the salt marsh and discharge directly to Nantucket Sound. But some models hint that groundwater “mounding” under the wastewater plant might cause some of the freshwater effluent to be diverted to other nearby coastal sites, which might be more sensitive to changes in salinity. The study sounds a cautionary note, saying it did not include a full analysis of freshwater inflow.

“As work is continuing relative to future [wastewater treatment facility] effluent disposal, it is certain that this analysis will need refinement in the coming years,” the report reads.

Duncanson said if freshwater discharge is a problem, it won’t be an immediate one.

“It’s going to be years before the treatment plant ramps up to a significant discharge,” he said. In the meantime, Duncanson said he and the town’s wastewater plan consultant, Stearns and Wheler, will study the issue in more detail.

Additional reports are still pending from the Massachusetts Estuaries Project. Once all of the information is in hand, the town’s comprehensive wastewater management plan can be finalized fairly quickly, officials say. Duncanson has said he anticipates holding public hearings next winter, with the goal of presenting the plan for town meeting approval in May of 2008.

Officials say extending sewer mains to most, if not all, of the town could cost as much as \$300 million.

The Cockle Cove salt marsh study final report can be viewed online at www.chatham-ma.gov.